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LETTERS

VOLUME VII

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The Life and Works of Amír Ḥasan Dihlavī.

By M. I. BORAH.

(Communicated by Dr. Bainsi Prashad.)

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I. THE LIFE OF ḤASAN.

Name and Parentage.—One of the most important Indo-Persian poets of the late seventh and early eighth centuries of the Hijra, whose works are read and admired even beyond the boundaries of India, is Amír Ḥasan Dihlavī. His full name is Amír Najm u'd-Dīn Ḥasan Dihlavī, son of Khwāja 'Alā'u'd-Dīn Sistānī, often known as 'Alā'-i-Sanjari (?).¹ The poet adopted Ḥasan as his *Takhallus* or poetical name. As he was born and brought up at Dihli (Delhi) he is known as Ḥasan-i-Dihlavī. We know very little about his parentage except the fact mentioned by some biographers that he was born of a noble family of Delhi.² The members of this family, it seems, were immigrants to India from Sistān as the appellation Sistānī added to his father's name indicates.

The title of Amír has been borne by two of the Indo-Persian poets, Ḥasan and his contemporary Khusrāw. With regard to Khusrāw we have historical evidence which says that the rank of Amír was conferred upon him by Sultan Jalāl u'd-Dīn Firūz-Shāh Khaljī.³ But there is no such testimony either external or internal to show that Ḥasan was ever raised to such a position by any of the ruling princes or kings. Most of the historians and biographers say that he was a *nadīm* or a courtier at the court of several kings and princes but none of them says that he was ever made an Amír. The biographers

¹ Baranī, p. 359; C.P.B., Vol. I, p. 196. Sanjari, I think, is an error of the copyists for Sijzi, i.e. an inhabitant of Sijistan or Sistān.

² K.A., Add. 18542, f. 65a; D.T.S., p. 247.

³ Firishta, Vol. I, p. 156.

further do not all use the title of Amír before his name. Some use the word Khvāja, some Shaykh and Mír,¹ and a small number Amír. But in the case of Khusraw, almost all the biographers regularly call him Amír. From this difference of treatment made by the biographers in the use of this appellation, and the absence of other evidence, we can reasonably say that the title of Amír was not officially conferred upon him. It was probably accorded to him by the people as a mark of respect generally shown towards the sons of the nobles and the Saiyids. Hasan belonged to a family of Saiyid, as we know from one of his odes where he addresses himself as Saiyid Hasan.² It is a custom in India to address the son of a Saiyid as 'Mír Šāhib' which is an abbreviation of Amír Šāhib. Therefore it is apparent that his designation of Amír was a mere dignity or a title of rank usually applied to the descendants of the Prophet.

The date of his birth and death.—Although the biographers are quite silent about the date of the birth of our poet, we have internal evidence at our disposal from which we can conclusively deduce the year in which he was born. In the preface to his *Diván* he says that he had completed its compilation when he was sixty-three years of age.³ But the date of the compilation, which is to be found only in the two existing prefaces attached to the copies of his *Diván* at the India Office and the Bankipore libraries, has been variously given. According to the India office copy it was completed on Sunday the twentieth of *Zil-Qa'da*, A.H. 715 (A.D. 1315),⁴ and the Bankipore copy gives the date as Sunday, *Rabí' I.*, A.H. 714 (A.D. 1314).⁵ Of these two dates the Bankipore date seems to be the more reliable. The poet says that this collection was completed during the reign of 'Alá' u'd-Dín Khaljí who was of the same age as himself.⁶ 'Alá' u'd-Dín died on the eighth of *Shawwál*, A.H. 715 (A.D. 1315).⁷ The date assigned to the compilation of the *Diván* in the India Office library copy would show that it was completed one month after the death of 'Alá' u'd-Dín, whereas the poet says that it was already complete during the Sultan's lifetime. Consequently we can accept the Bankipore date as authentic, and thus place the date of the poet's birth in the year A.H. 651 (A.D. 1253), during the reign of Sultan Násir u'd-Dín Mahmúd.

All the biographers, except Taqí Káshí, agree that the poet died at Deogír or Dawlatábád. But Taqí Káshí says that he

¹ Badáúni, Vol. I, p. 201. The *Majma'* calls him a Shaykh, probably in the sense of a pious man, not as a class as understood in India.

² D.H., I.O.L., f. 108 (b).

³ *Ibid.*, f. 1a.

⁴ *Ibid.*, f. 2b.

⁵ C.P.B., p. 197.

⁶ D.H., I.O.L., f. 1.

⁷ B.N., Add. 21,104, f. 383.—

تاریخ هر دو شاه ز سوال دو چهار تاریخ عام پانزده هفتصد از شمار

died at Delhi, twenty years after the death of Amír Khusraw and that he was buried at the foot of the tomb of his spiritual guide Nizám u'd-Dín Awliyá.¹ But no other writer corroborates his statement. If his tomb had been at Delhi, it would immediately have attracted popular reverence and have become a place of pilgrimage as is the case with the tombs of Shaykh Nizám-u'd-Dín Awliyá and Amír Khusraw. Badáúní on the other hand definitely says that he died at Dawlatábád 'where his tomb is well known and is visited as a sacred shrine'.²

The statement of Badáúní has been corroborated by the *Mir'át-u'l-Abrár*, a biography of saints written in the eleventh century A.H., which says³:—

'He was buried at Deogir or Dawlatábád, near the sepulchre of Shaykh Burhán u'd-Dín Gharib.⁴ His tomb is a place of pilgrimage to the people of that country, who call him Hasan Shír or Hasan the Lion, because no one can stay near his tomb at night. If any one, through ignorance and foolishness, stays for a night at his grave, he sees the vision of a lion and falls into a swoon.' We can therefore take the statement of Badáúní as correct and accept Dawlatábád as the place of his death and burial.

We have no conclusive evidence as to the exact date of his death. The dates given by the biographers vary from A.H. 707 to A.H. 769, (A.D. 1307-67). I shall therefore, first of all, give the dates which have been assigned by different writers and then try to ascertain, as closely as possible, what the correct date is. The following dates have been given by the under-mentioned authorities:

Mirzá Bídil gives the following chronogram:

حسن دهلوی بمزرع دهر تخم نیکی و نیکنامی کشت
هاتف بانگ زد ای سائل (؟) سال تاریخ فوت اوست بهشت

'Hasan Dihlaví in the meadow of the world,
Sowed the seed of goodness and fame;
The invisible speaker cried aloud, "O, enquirer!"
The date of his death is (*Bihisht*) Paradise.'

The numerical value of the letters B.H.Sh.T. of the word *Bihisht* = 2+5+300+400 = 707 = A.D. 1307.⁵

¹ K.A.Z.A., I.O.L., No. 667, f. 541a.

² Badáúní, Vol. I, p. 201.

³ M.A., Or. 1756, f. 144.

⁴ Shaykh Burhán u'd-Dín Gharib was one of the devoted disciples of Shaykh Nizám u'd-Dín. He was deputed by his spiritual guide to preach Islam at Burhánpúr and Dawlatábád. S.A., Or. 224, f. 91.

⁵ Bayáz, Add. 16, 803, f. 435.

Mir'at u'l-Khayāl,¹ A.H. 707 = A.D. 1307.

Kalimāt u'sh-shu'arā,² A.H. 707 = A.D. 1307.

³ *Khulāṣat u'l-Afkār*, A.H. 738 = A.D. 1337.

⁴ *Taqī-Kāshī*, A.H. 745 = A.D. 1344.

⁵ *Tazkira-i-Husaynī*, A.H. 769 = A.D. 1367.

Badáúní⁶ and Firishta⁷ say that he died at Dawlatábád in the year of the transfer of the capital by Muḥammad Tughlaq from Delhi to Dawlatábád.

We cannot accept the year 707 A.H. as the date of his death. This was the year when he commenced the writing of his prose book known as *Favá'id-u'l-Fu'ād*, in the completion of which he spent fifteen years, from A.H. 707 to 722.⁸ This was the most fruitful and active period of his life, during which he also compiled his *Diván*.⁹ We are therefore quite certain that he lived until A.H. 722 (A.D. 1322). We have also evidence that he survived his spiritual guide Nizām u'd-Dīn Awliyá and his contemporary Amír Khusraw, and he is said to have written a chronogram giving the date of Khusraw's death.¹⁰ Amír Khusraw died in A.H. 725 (A.D. 1325). It is therefore evident that Ḥasan died some time after this year. The other dates given by the biographers are not corroborated either by direct or circumstantial evidence. Therefore, in the absence of any conclusive evidence, we can rely on the statement of Badáúní and Firishta which seems to be the most probable and place the date of his death some time after the transfer of the Indian capital from Delhi to Deogir or Dawlatábád.

The transference of the capital from Delhi to Dawlatábád by Sultan Muḥammad Tughlaq was actuated not by his peculiar whims or caprices as some historians believe, but by a sincere desire to make the centre of his dominion in a more central place, from which he could reign with greater ease and vigilance.¹¹ With this end in view he took this step after the rebellion of Gurshásp, the governor of the principality of Sagar in the Deccan.¹² This rebellion occurred in A.H. 727 (A.D. 1327),¹³

¹ Or. 231, f. 35.

² Or. 470, f. 155. This MS. reads as 807, but I think it is the copyist's error who wrote eight instead of seven.

³ Add. 18, 542, f. 65.

⁴ I.O.L., No. 667, f. 541.

⁵ Or. 229, f. 37.

⁶ Vol. I, p. 201.

⁷ Vol. I, p. 262.

⁸ Or. 1806, f. 132.

⁹ D.H., I.O.L., No. 1223, f. 2b.

¹⁰ My.K., Or. 3537, f. 141.

¹¹ Baranī, p. 473; Firishta, Vol. I, p. 242.

¹² Firishta, Vol. I, p. 241. Badáúní calls him the Inspector-General of the forces.

¹³ Badáúní, Vol. I, p. 226; Firishta has not given the date of this rebellion and the transference of the capital from Delhi to Deogir. He

and this is the year when the Sultan decreed the transference of the capital. The royal decree had compelled the officers of the court and all those connected with the business of the State to move immediately to the new Capital; but the people were left to their own will, although encouragement was given and persuasion was attempted and various facilities were provided for their voluntary transfer.¹ But two years after this decree, i.e. in A.H. 729 (A.D. 1328) when the Sultan was returning from his war against Tarmashírín,² the Mongol invader of India, he ordered the transference of the entire population of Delhi to Dawlatábád.³ This second decree was issued more as a punitive than as an administrative measure. According to Ibn Baṭūṭa, the Sultan took this vindictive step as a measure against some of the inhabitants of Delhi who wrote anonymous letters reproaching him for the removal of the court.⁴ The indiscreet act of a few made the entire population of Delhi suffer the awful consequences of this monstrous decree. It was probably during this year that Hasan migrated to Dawlatábád. He would not have left Delhi, his birthplace and the shrine of his spiritual guide Nizám u'd-Dín Awliyá unless he had been forced to do so; his death followed in the same year, probably hastened by his inability to withstand the climate of the Deccan at such an advanced age.

His childhood and youth.—Of the childhood and early education of our poet very little is known beyond the fact that he began to compose poetry from the age of thirteen, which we know from an incidental reference in his prose preface attached to the *Diván*.⁵ Nothing has ever been said as to whether he was put under any tutor for his education and training. He makes, of course, occasional references in his *Diván*, to his indebtedness to the great Persian poets Sa'dí and Shaykh Abú-Sa'íd in whose footsteps he followed.⁶ But there was no opportunity for him

gives in detail the causes of the transfer of the capital and narrates the whole history abruptly after his account of the Sultan's expedition to Himáchal which was led in A.H. 738 (A.D. 1337-38). This has led Briggs in his *Mahommedan Power in India* to suppose A.H. 738 to be the date of the transfer of the capital from Delhi. But the text does not show any chronological relation of the one with the other. The Himáchal expedition was led eleven years after the transfer of the capital (*vide* Badáúní, Vol. I, p. 229).

¹ Badáúní, Vol. I, p. 226.

² Identified with the Chaghatá'i, 'Alá'u'd-Dín-Tarmashírín who reigned in Transoxiana from 1322-1330 or 34; *vide* C.H.I., Vol. III, p. 143.

³ Badáúní, Vol. I, p. 228; Firishta also mentions of this second decree; (*Vo*' I, p. 243). Baraní gives no date of this important event.

⁴ Ibn Baṭūṭa, Vol. II, p. 71.

⁵ D.H., I.O.L., f. 1.

در سیزده سالگی . . . نظمى از كورة تفكر حاصل مى آمد

⁶ *Ibid.*, ff. 75a, 107a, 137b.

to meet either of them. It seems, therefore, he must have received a sound education at home, as was the custom among the noble families of those days; and with this to start with, he must have devoted himself to the study of great minds, and thus developed the poetic genius which was innate in him.

We find Hasan in the prime of his youth working in a baker's shop, where Amír Khusraw, his contemporary, first met him. The amiable nature and elegant disposition, which he displayed in a short conversation with Khusraw, led to the growth of their mutual admiration and friendship. It was on the same day that he was introduced to Shaykh Nizám u'd-Dín Awliyá, the greatest saint of his time. The occasion of this meeting is described in the following way¹ :—

'One day Shaykh Nizám u'd-Dín Awliyá was passing through the market-place with some of his companions, among whom was Amír Khusraw then in the prime of his youth. Khvāja Hasan, the poet, who was extremely handsome and a perfect master of excellence, was sitting at the counter of a baker's shop. When Amír Khusraw saw him he found him to be a person of elegant, graceful and attractive nature. He became enamoured of him and he went to the shop and asked him, "How do you sell your bread?" Hasan replied, "I put the bread on one scale of the balance and ask the customer to put his money on the other, when the money overweighs, I allow the customer to go". Amír Khusraw said, "If the customer has no money what would you do?" He replied, "I accept his grief and supplication in place of gold". Amír Khusraw became astonished at this reply of Hasan. Then he reported the matter to the Shaykh. Khvāja Hasan, also being enamoured of him, left his business on that very day. Although he had not become a disciple of the Shaykh at that time, he began to frequent his monastery and busied himself in the acquisition of knowledge.' From this time, as the story goes, there developed a great friendship between Khusraw and Hasan.

Earliest Association with Royal Courts.—The exact date and occasion of his entry into the royal court is not known. The only reference we come across is in the *Favá'id u'l-Fu'ád*,² where he says that he accompanied Sultán Ghiyás u'd-Dín Balban in his campaign against Tughril the rebellious Governor of Bengal at Lakhnawtí. This rebellion was made in A.H. 673³ (A.D. 1279), so it appears that he came into contact with the court some time before this.

¹ Firishta, Vol. II, p. 754.

² Or. 1806, f. 69a. He says that in this campaign he passed all his days with Shams-i-Dabir, the Secretary of Bughra Khán, the Governor of Bengal after Tughrul.

³ Firishta, Vol. I, p. 138.

He did not stay long at Lakhnawtí. He returned to Delhi with the King, and in A.H. 679 (A.D. 1280) he was invited by prince Muḥammad Sultán, the eldest son of Balban, to his court at Multán.¹ This prince held Amír Ḥasan and his contemporary Khusraw in very high esteem and conferred upon them the offices of the *Davít-Dár*² and *Maṣḥaf-Dár*,³ respectively, and included them in the circle of his boon companions. Both these poets were in his service for a period of about five years till his death in A.H. 684 (A.D. 1285)⁴ in a battle fought against the Mongol horde under the command of Aitímúr Khán.

Prince Muḥammad, known as Qá'án Malik or Khán-i-Shahíd,⁵ was a great patron of letters. The profuse generosity which he showed towards the men of learning and the encouragement which he gave to the advancement of knowledge made him very popular among his subjects and attracted men of letters to his court. In his zeal for fame he twice sent for Sa'dí of Shíráz to come to Multán. On both of these occasions he sent to the poet the expenses of the journey and promised to build a monastery for him and devote the revenue from several villages to its maintenance. But Sa'dí refused this offer, and excused his inability to comply with the request on account of his old age and sent to the prince some *Ghazals* written in his own hand.⁶ It is said that the prince himself prepared a *Bayáz*, or anthology, containing twenty thousand selected couplets from the works of the best Persian poets, which has been highly praised by Ḥasan and Khusraw as an excellent specimen of judicious selection. After the death of the prince it was given by Balban to Amír 'Alí Jāma-dár, who in turn bequeathed it to Amír Khusraw.⁷

A very interesting account of the Court and character of Prince Muḥammad, with special reference to his benevolent treatment of Amír Ḥasan and other men of letters has been given by Ziyá Baraní. He says⁸ :—

'The court of Muḥammad Sultan was full of men of talent and profound scholars. His *nadíms* or boon companions used

¹ Badá'uní, Vol. I, p. 130.

² 'The Keeper of the Royal Inkstand', a rank of high honour.

³ 'The Keeper of the Imperial *Qur'án*', a rank of high honour.

⁴ Baraní, p. 109. The *Habíbu's-Siyar* is wrong in stating that they served the prince for a period of three years only. (*Vide Add.* 1725, f. 104.)

⁵ Qá'án Malik is the title given to him by Balban on the occasion of his appointment to the governorship of Multán. (*Vide Baraní*, p. 66.) He is known as Khán-i-Shahíd or 'the martyr prince' after his death in the battle fought against the Mongols.

⁶ Baraní, p. 68. Dawlat-Sháh is wrong in stating that Sa'dí came to India to see Khusraw (T.D.S., p. 239).

⁷ Firishta, Vol. I, p. 137.

⁸ Baraní, pp. 66-7.

to recite the *Diváns* of Saná'í and Kháqání, and the merits of the poems of these writers were discussed before him by the wise men of his court. Amír Ḥasan and Amír Khusraw were in his service for a period of five years at Multán and used to receive gifts and allowances from him as courtiers. The wisdom, which this prince possessed, had led him on various occasions to recognize the merits and talents of these two poets. He held them in higher esteem than any of his courtiers. He was so pleased with their prose and verse that he made both of them his intimate associates, and he used to show greater favour and bestow more gifts and robes of honour on them than on any of his *nadíms*. And I, the author of the *Ta'ríkh-i-Fírúz-Sháhí*, have often heard about Khán-i-Shahíd from Amír Khusraw and Amír Ḥasan, that a prince so polite and courteous was seldom to be found among the princes. If he was required to sit on the government-seat for the whole of the day and night, he would not deviate an inch from the formalities of decorum. We never saw him in a cross-legged position. We never heard him uttering any obscene or rude words either at drinking parties or in other assemblies. He drank so moderately that he would never get intoxicated or lose his senses The same historian remarks in another place that he had very often heard Amír Ḥasan and Khusraw saying, 'Had we and other scholars been fortunate enough, then the Khán-i-Shahíd would have lived and ascended the throne of Balban. He would have drowned all the scholars and artists of the age in gold; but we artists have no luck and Fate does not look on us with the eye of Justice.'¹

These are the glowing tributes paid to the prince by the contemporary historian and the poets of his court. His death was a severe blow not only to the old King Balban, who held him as dear as his life, but also to the development of Indo-Persian literature. His succession to the throne of Delhi would have created a healthy intellectual atmosphere in the court and opened a new era of culture and learning. His death was mourned equally by the court and the people.² Amír Khusraw wrote two elegies describing the events of his death which were taken up by the common people who 'for about a month used to chant them as threnodies over their dead from house to house'.³ On this occasion Ḥasan wrote in prose the following *Margiya* (a lament), which gives not only a vivid description of the battle the prince fought, but also of the deep affection and loyalty the poet bore towards him.

¹ Baraní, pp. 68-9.

² Baraní, p. 109.

³ Badáúní, Vol. I, p. 137.

*The Marṣiya*¹.—‘It is an old story that although the tyrannous sky ties for a while the knot of concord and makes the covenant of mutual friendship, it turns away; and although the discordant time adopts the path of concord for a while and makes the covenant of fidelity yet it breaks away. The impudent sky, whose pupil of manliness is vitiated by the mote of meanness, although like a drunken man, bestows a gift without any idea of generosity, yet at the end takes it back like children, without any betrayal of dishonest conduct. The customs and usages of the oppressive time are of this nature. Whether by experience or by rumour we see and hear, whoever it sees rising like the moon, it desires to blacken his perfect face with the mark of injury. Whoever it sees rising like a cloud, it strives to shatter its substance into pieces on the horizon. In this garden of grief and this orchard of amazement, as no rose is without a thorn, so no heart is free from the thorn of anguish. Alas! for many a newly sprung verdure that has been turned pale by the calamity of the wind of autumn. Alas! for many a newly sprung plant that has been laid low on the ground by the hurricane of time.....’

‘One of the instances of this parable is the death of the late prince Qá’án-Malik Ghází on Friday, the last day of the month of *Zí’l-Hijja* 683, A.H. (A.D. 1285)² when the moon like kindness in the heart of an infidel was nowhere visible, the sun in the company of the army of Islam appeared with its striking sword. The great prince, who was the sun of the heaven of the kingdom, with the light of holy war shining on his forehead and with a strong determination for the holy war firmly fixed in his enlightened mind placed his auspicious feet in the stirrups.

‘It was represented to his judgment, the solver of all difficulties, that Aitimúr³ had arrived with his whole army at a

¹ The earliest authority where this *Marṣiya* is to be found is the *Ta’ríkh-i-Mubárak-Sháhi* (Or. 1673, ff. 354–58). Of the later historians, Nizám u’d-Dín and Badáúní also reproduce it. It seems their authority is the T.M.S., cf. also Ranking’s translation of this *Marṣiya* in his *Badáúní*, Vol. I. I have pointed out in my footnotes where I have differed from Ranking’s interpretation.

² Baraní says this battle was fought in A.H. 684 (*vide* p. 109). Khusraw in his elegy says ‘the battle was fought on Friday, the last day of the month of *Zí’l-Hijja*, the end of the year 683 and beginning of 684.

جمعه بود و سلخ ذی حجه که بود آن کارزار آخر هشتاد و سه آغاز هشتاد و چهار
Khusraw and Ḥasan give us the exact date of this battle whereas Baraní puts simply the year. The correct date of this battle is Friday, the 29th of *Zí’l-Hijja*, A.H. 683 = 8th March, A.D. 1285. Prof. Habib is wrong in assigning the date of this battle to a hot April day in A.H. 687 (*vide* his *Amír Khusraw*, pp. 15–20). The *Ṭabaqát-i-Akbarí* says the battle was fought on the third of *Zí’l-Hijja*, probably it is due to the copyist’s error who transcribed the word سلخ as سوم (*vide* T.A., p. 98).

³ The name of the Mongol General.

distance of three *farsangs*. At daybreak he ordered his army to march from that place, and having faced the infidels at a distance of one *farsang* from them he selected the place of battle on the bank of the river Laháur (Lahore) on the outskirts of Bágh-i-Sabz. As there was a large marsh¹ adjoining the river, he fortified the place very strongly and arranged that when the infidels should advance both the waters would be in the rear of the army so that neither would his soldiers be able to fly from the battle nor could any mishap arise through the enemies on the rear of his army.

'In truth, that precaution was due to the extreme vigilance and skill of that world-conquering Khán. But when evil luck befallcth, the string of all affairs gets loose and the thread of all arrangements becomes disorganized.....

'It happened that on that day the moon and the sun, who bear close resemblance to Kings, were suspended in the sign of the Fish. Mars, whose red face is due to the blood of the nobles of the state, has drawn the arrow of meanness and the dart of insolence from the quiver of that zone against the Orion-girdled Khán who was like Leo in the zone of the watery house of bloodshed and destruction, and the proofs of mischiefs and disorders were evident, and the command and significance of the verse, "When Fate comes the plain becomes narrow", became impressed in the pages of record.

'In short, it was midday, when the horseman of the sky had reached the region of noon and that world illuminating

¹ There are different readings as to the name of this place. According to Badáúní it is a big village adjoining the river (متصل آب دیہی بزرگ بود) Vol. I, p. 132). The *Ta'rikh-i-Mubarak-Sháhi* reads as متصل آب دھندی (or 1673, f. 355). The *Tabaqat-i-Akbari* reads as متصل آب دھندی بزرگ بود (Add. 6543, f. 44). If we accept Badáúní's text we cannot explain the significance of the two sheets of water mentioned in the next line which formed the rear of the army. Ranking explains the term در آب (Dúáb) as the rivers Rávi and Satlaj. But these two rivers are so far apart from each other that it was not possible to utilize them as a strategic defence in this particular area. So if we take Dúáb in its literal sense, the sense becomes more clear. I prefer the texts of the other two histories and read the word as دھند (*Dhandh*) meaning a 'swamp'. The word *Dhandh* in the Panjábí language means a lake, a depression in the ground that fills with water in the rainy seasons, etc. Here I think the author has used this word in the sense of a marsh and the *Tabaqat-i-Akbari* explains the term by adding the Persian word کولاب (*Kúláb* = pond or reservoir) after the word *Dhandh*.

king was on his wane, suddenly a dust¹ arose from the side of the infidels. The Khán-i-Ghází immediately rode on his horse and gave orders that the entire army with its rank and file, according to the verse "Kill the polythists, all of them" formed in a line a hundred times stronger than the wall of Alexander.² After arranging the right and left wings of the army, his august person stood in the centre just like the moon in the midst of the stars. The infidel Tátárs (may confusion and dismay be on them) crossed the river Laháur and opposed the army of Islam. These people, wild and desert born, have put the feathers of the owl on their inauspicious heads, while the warriors of Islam consisting of the Turkish and Khaljí Maliks and the nobles of Hindustán and the entire army in the prayer-place of battle (for the reason that the Prophet has compared *Jihád*³ to that of prayer, saying "We return from lesser war to the greater")⁴, raised their hands by shouting "God is great". In the first attack a large number of the Mongol cavalry were put to the sword. The lances of the Maliks of the state pierced the limbs of the enemy in such a way that each one of them began to spurt blood, and the plumes of the arrows of the Turks, who were in attendance on the prince, became so interlaced in the persons of the Tátárs that no space was left. Every time, the lion-hearted lord, the wielder of the sword, made his attack from the centre of the army with a sword as pure as his faith, you would say that in that field of battle, the sword was trembling at the heroic conduct of the prince; and transforming itself into a tongue was saying to him, "To-day leave the suppression of this disaster and the destruction of those infidels to the servants of the state. Do not take this personal risk, because the sword is two-edged and the sword of death is not a respecter of persons in its work. No one knows what will happen to whom through the decree of the powerful Fate. I close my eye against that fateful eye."⁵

'During the time he was performing the rites of the holy war and the ceremonies of battle in the field of endeavour, each

¹ Badáúní's text says گرومی meaning a band of people. The T.M.S. writes as گردی از سمت آن کفره پدید آمد. This reading seems to be correct and makes the sense more clear.

² Alexander the Great is believed to have built a very strong wall against the incursions of the wild races of Northern Asia to which many of the Persian writers refer. This wall is also known as the wall of Gog and Magog.

³ The holy war.

⁴ According to the Śúfis there are two *Jiháds*: (i) *Al-Jihád u'l-Akbar* or the greater warfare, which is against one's lust, (ii) *Al-Jihád u'l-Aṣghar* or the lesser warfare directed against infidels. (H.D.I.)

⁵ عين الكمال 'Ayn u'l-Kamál. The evil effect of some eyes which is supposed to kill people by their piercing glance.

of the weapons began to speak in the following way. The lance said: "O, prince! Withdraw thy hand from me; the tongue of my point, on account of constant fighting and slaying has become blunt; I have not the strength to pierce the enemy. God forbid, that when I charge, an unfortunate movement may appear from me." The arrow said: "O, thou! The knot of whose bowstring opens the knot of the nodes, do not advance to meet this danger; for I, myself throw dust on my hand in advancing to this dangerous spot. God forbid, that the narrow-eyed Turk of the sky, who is in the fifth House, should shoot an arrow of error by way of tyranny and ruin from his bow of malice from the place of ambush at the door of the eight House." And the lasso said: "To-day the string of planning should not be left out of the hand of deliberation, for I am contorted within myself at this hasty war and this rash conflict. Wait for a while; because Islam and the Muslims are like a rope fastened to the tent of your bounty. O, God! Do not allow so much space to the custom of noose-throwing with these people."

'In short, that prince, the defender of faith and destroyer of infidelity, from noon till evening, with the main body of his army, carried on the battle with great vigour against that band of heathens. The uproar of the victors and the clamour of the lovers of battle had deafened the ears of the earth and the sky. The fiery tongues which sprung up from the heads of the lances, and the tongues of the swords did not err a single letter in executing the order of the angel of Death, all uttered the verse, "A day when man will flee from his brother".¹ The surface of the earth was full of blood like old men who had lost their sons, and the face of the sky was covered with dust like the heads of sons who had lost their fathers.

'In the very midst of this conflict and calamity, suddenly an arrow from the quiver of Fate had struck the wing of that royal falcon of the field of holy war. And the bird of his soul had flown from the cage of the body towards the garden of paradise, "Verily we belong to God and unto Him do we return".²

'At that moment the prop of the religion of Islam broke like the broken heart of an orphan, and the rampart of the faith of Islam had fallen low like the tomb of the poor. The strength which the state had, passed away and the radiance which Islam possessed had disappeared. It was just at the time of sunset that the moon of the life of that prince, whose fortune was on the wane, sank in the west of extinction.

¹ Qur'an, Sura LXXX, 34. يَوْمَ يَفِرُّ الْمَرْءُ مِنْ أَخِيهِ

² The Qur'anic verse uttered by a Muslim at the death of a person.

'The sky, after the manner of mourners had put on a blue garment and began to shed black tears over its cheeks; Saturn in accordance with the rules of fidelity and the customs of mourning had blackened its garment, and began to weep over the condition of the people of Hindustán, at his death. Jupiter, in grief for that dust-soiled body and blood-stained mantle, began to tear his garment and throw his turban in the dust. The heart of Mars, on account of his death, became narrow like the eyes of the Turks, and the face of his life became stiff and black like the curls of a Negro, and being sorely grieved at this event brought forth his heart's blood. The Fish (sign pisces) began to tremble like a ram in the clutches of the butcher. The Sun, out of shame, as to why it did not strive for the prevention of this calamity and disaster, did not appear but sank below the earth. When Venus saw the sufferings of the heavenly bodies at the clutches of Time, she played her tambourine more vehemently, changed the tone of the drum and began to sing in a different tune; and instead of playing her instrument she began to weep over the death of that magnanimous prince. Mercury, who in wars and conquests used to record like a scribe the deeds of victory, on that occasion of tyranny blackened his face with the ink of his ink-pot, and clothed himself with a garment of papers made of the pages of his record. The resplendant moon, in the shape of a crescent with a bowed stature, in that land of resurrection, was striking her head against the door and wall of the horizon and observed the rites of condolence.

'May God the Great and Exalted raise the holy and pure soul of that warrior prince to a lofty position and high station, and bestow on him His eternal beauty, greatness and glory! May every kindness and favour which he showed to this poor and forlorn one, be the cause of increasing his dignity and the remover of his faults, Amen! O Lord of the Worlds!' ¹

¹ The authenticity of this *Margiya* has been questioned by Ranking in a note appended to his translation of Badáúní (Vol. I, p. 188, Note 5). He says 'Ziyá-u'd-Dīn Baranī attributes this lament to Amír Khusraw. Firīshṭa also states that Amír Khusraw escaped when the prince was killed, and wrote a lament. It seems probable therefore that the lament should be attributed to Mīr Khusraw. The Ḥasan which occurs in Text and both MSS. (A), (B) may have its origin in a copyist's error.' The conclusion drawn by this learned scholar is based on a wrong and incomplete translation of a passage of Baranī by Sir Charles Elliot, which says 'Amír Khusraw was made prisoner by the Mughals in the same action, and obtained his freedom with great difficulty. He wrote an elegy on the death of the prince.....' (vide Elliot, Vol. III, p. 122). But neither Baranī nor Khusraw himself makes any reference as to his writing a *rose Margiya*. On the other hand Baranī definitely says that Khusraw wrote two poems (p. 110):—

امیر خسرو در آن حرب اسیر مغل شده بود و بنوعی از دست ایشان رهایی یافت
و او در مرثیة خان شهید دو شعر گفته است .

Intimate friendship with Khusraw.—Here in the court of Khán-i-Shahíd the love and friendship between Hasan and Khusraw had developed to such an extent that their calumniators began to ascribe to them gross misconduct.¹ This calumny was reported to the prince. The prince had forbidden Hasan to associate with Khusraw, but he did not comply with his demand and continued to associate with Khusraw as before. The matter was again reported to the prince. This time, the prince was annoyed at Hasan's disobedience and ordered him to be flogged. But to the utter surprise of the prince and the courtiers he immediately ran to Khusraw's house. The prince then summoned Khusraw and Hasan and demanded an explanation of their alleged misconduct. Khusraw explained their connection to be based on the idea of divine love purged from all earthly impurities, and said, 'Duality has disappeared from us'. Then bringing out his hand he displayed to the prince the marks of the strokes impressed in his own hand, exactly in the place where Hasan received them and said 'The proof of real friendship is in the hand'.² The prince was silenced by this reply and Khusraw recited the following quatrain³ :—

'Love came and ran through my veins like blood,
It had emptied my self and filled it with the Friend,
The limbs of my body, the Friend possessed,
All is He, nothing of me is left.'

We cannot believe in the miraculous transmission of the punishment of Hasan to Khusraw as it is described by their biographers. It is quite probable that Khusraw's love for Hasan was so deep and sincere that he could not bear the punishment Hasan suffered on his account, and consequently he might have inflicted on himself as a proof of real love and sympathy, the same amount of injury as was received by Hasan. But,

'In that battle Amír Khusraw was made a prisoner by the Mughals, and obtained his freedom by some device and he has written two poems in lament of Khán-i-Shahíd.' Firishta says nothing about the *Margiya*. He mentions:

امیر خسرو دران معرکہ حاضر بود اسیر مغل گشته و بآن نوع کہ در خضر خان
و دیوادی رانی ثبت افتاده رھائی یافت و دھلی شتافت *

(Vol. I, p. 144). 'Amír Khusraw was present in that battle. He became a captive of the Mughals and obtained his freedom in the way as it is described in his *Divaldí Rání* and *Khizr Khání*.' From these facts it appears that this *Margiya* is a genuine work of Hasan and is rightly attributed to him by the historians of India.

¹ They were accused of belonging to a heretical sect of Súfis known as *Malámatís* who practise some reprehensible acts opposed to orthodox opinion (*vide* Firishta, Vol. II, p. 755).

² M.Us., Or. 208, f. 99; Firishta, Vol. II, p. 755.

³ M.Us., Or. 208, f. 99.

however, there is a certain amount of truth in the story. Ḥasan has probably referred to this incident in the following poem¹:—

‘As the demonstration of excellence was perfected by
thy beauteous down,
The private affliction of ours became public enow,
The seed I sowed in thy hope is cast to the dust,
The cauldron I boiled in thy love, putrid became.
My reason, which placed the saddle on the bay-horse
of Time,
Subdued at last by the whip for the love it bore to
thee.
He who declares not lawful the creed of thy love,
May his blood be lawful and unlawful his dear life.
O, Khvāja! Be firm in the street of rectitude,
(For) None can achieve fame in the lane of love.
Maḥmúd Ghaznaví, the lord of thousand slaves
Bridled by love became the slave of a slave.²
O Ḥasan! Die in love so that perfection thou mayest
attain,
Have you not heard? He who dies perfection attains.’

This type of love which we find between Ḥasan and Khusraw was not uncommon among the Ṣufi poets. To a superficial observer it may be quite a grotesque and reprehensible action. But the idea of such love was quite different among them. It was platonic, something holy and pure, free from passionate desire. They adored beauty for its own sake on the principle that ‘Beauty is truth, truth beauty’. Once Sa’dí the great Persian poet heard of the exquisite personal charms of the son of Khvāja Humám u’d-Dín, a man of great distinction and poetical talent at Tabríz, he travelled to that city for the sole purpose of gratifying his eyes by the sight of his beauty.³ Sir Gore Ouseley remarks: ⁴ ‘Sa’dí was a great admirer of beautiful youths, like all other Ṣufis, we may hope, who profess the most ardent, but platonic affection for individuals of their own sex, famous for beauty and talent, declaring it to be less selfish than the love of man to woman, and that they pay the most perfect adoration to the Creator, by thus disinterestedly loving and admiring His handiwork.’ The words quoted here may equally well be applied to Khusraw and Ḥasan. Our poet expresses this idea in the following verses of one of his poems⁵:—

¹ D.H., I.O.L., f. 123b.

² The reference is to Sultan Maḥmúd's love for his favourite slave

Ayáz.

³ M.U.s., Or. 208, f. 95.

⁴ N.P., p. 13.

⁵ D.H., I.O.L., f. 184b.

شمعست رخت یا مه نی هر دو خطا دیدم
 در وصف نی آید روی که ترا دیدم
 من در تو نظر کردم تو در سخن بنده
 تو صنعت من دیدی من صنع خدا دیدم

‘Is thy face a lamp or a moon? No I am wrong in both,
 Beyond description is thy face that I see;
 I look at thee and thou at my verse
 Thou admirest my art and I the handiwork of God.’

In similar way Háfiz also describes the pure nature of love he practised ¹:—

منم که شهره شهرم به عشق ورزیدن
 منم که دیده نیالوده ام به بد دیدن

‘That one, am I who am renowned for love-playing
 Not that one am I who have stained my eyes with
 illseeing.’

The friendship between these two poets seems to have been of a permanent nature and we find complimentary references made by each to the other. In one of the discourses of Nizámu’l-Din Awliyá compiled by Amír Khusraw under the title of *Ráhat-u’l-Muhibbín* ² he calls Hasan ‘my brother’. In the *Dibácha-i-Ghurra u’l-Kamál* where Khusraw condemns the jealousy of his contemporaries and calls them men of very low merits, he pays a high tribute to the writings of Hasan in the following words:—

‘If any one praises the meaningless verses of Mu‘izzí for the beauty of their style and diction, he ought to study the style and diction of Saiyid Hasan, Nizámí and Zahir, so that he may be acquainted with them and become a discerning judge.’ ³ Hasan always refers to Khusraw in the most affectionate terms. He calls him his brother. ⁴ He also, like Khusraw,

¹ D.H.B., No. 461.

² R.M., or 1756, f. 175. This book contains the utterances of the Awliyá made during the year 689–90 A.H. The name of the author does not appear on the title page, but from the preface attached to it, it is evident that the author is Khusraw, who says that this book was compiled after the compilation of his former edition known as *Afzal-u’l-Favá'id* and calls the author as Khusraw Láchín.

³ G.K., Add. 23, 549, f. 19b.

⁴ D.H., Bodl (Ousley, 122), f. 287.

complains of the jealousy of some of his contemporaries, as the following verses show:—

از سخن دزدی نیارد شد کسی صاحب سخن
 دیو اگر انگشتی دزد سلیمان کی شود
 اهل در داند در افشاندن و درج معرفت
 آنکه او گل دزد باشد او در افشان کی شود
 از فضول (؟) حاسدان فضل حسن مخفی نماید
 آفتاب اندر پر خفاش پنهان کی شود

'None can become a master of poetry by pilfering
 (others) verses,
 How can the devil become Solomon by stealing his
 ring?
 The possessor of pearl knows how to scatter pearls and
 (to use) the casket of knowledge,
 He who is a pilferer of clay, how can he become a
 scatterer of pearls?
 The virtues of Hasan will not be concealed by the
 detraction of his enemies,
 How can the sun be concealed under the wing of the
 bat?'

But on the other hand he pays a high compliment to Khusraw in the following verses:—

خسرو از راه کرم بپذیرد آنچه من بنده حسن میگویم
 سختم چون سخن خسرو نیست سخن اینست که من میگویم

'Khusraw accepts by way of kindness
 Whatever the humble Hasan says.
 My poetry is not like the poetry of Khusraw,
 This that I say is true.'

Some of the biographers³ say that Hasan was a pupil of Khusraw and that he used to imitate the style of the latter.

¹ D.H., I.O.L., f. 111.

² D.H., I.O.L., f. 227. Dr. Mirza in his *Life and Works of Amir Khusraw* (p. 49) holds that these verses are a sarcastic allusion to Khusraw. But in view of internal and external evidences in our possession regarding the most intimate friendship between these two poets, I think, these verses were written as a compliment to Khusraw and not as sarcasm.

³ T.D.S., p. 247; K.A., Add. 18, 542, f. 65a; Taqí Káshí, I.O.L. 687, f. 540b.

But in none of the works of these two poets do we find any reference which gives evidence for this statement. On the other hand Hasan asserts that he had followed the ideas of Sa'dí and tried to plant them on Indian soil. In one of his *Ghazals* he says:—

حسن گلی ز گلستان سعدی آوردست¹

که اهل معنی گلچین آن گلستانند

'Hasan has brought a rose from the (*Gulistán*) rose-garden of Sa'dí,

Because the mystics are the gatherers of the rose of that (*Gulistán*) rose-garden.'

In another place he says²:—

در خم معنی حسن را شیوه نور بخت عشق

شیره از خمخانه مستی که در شیراز بود

'In the goblet of spirituality Hasan has filled a fresh elegance of love,

With the grape-juice from the tavern of intoxication of Shíráz.'

In a similar way Khusraw also says that he had followed Sa'dí in his *Ghazals* and Nizámí in *Magnaví*.³ It seems from their statements that both of them followed the same school of thought in their lyrical poetry and it is for this reason that we find the similarity of ideas between these two poets, which led some biographers to conclude that one is the pupil of the other.

Hasan at the court of Jalál u'd-Dín-Firúz.—After the death of Khán-i-Shahíd we do not hear of Hasan's active association with the court until the accession of Sultán Jalál u'd-Dín Firúz Sháh Khaljí in A.H. 689 (A.D. 1290).⁴ This was probably

¹ D.H., I.O.L., f. 107a. There is a pun upon the word *Gulistán*, the book of Sa'dí and a rose garden which cannot be preserved in translation.

² D.H., I.O.L., f. 137.

³ G.K., Add. 21, 104, f. 163a.

⁴ Baraní places the date of his accession in A.H. 688 (p. 175). But Khusraw gives the exact date and year to be Tuesday, the 3rd of Jamád II, 689 (Mif., F., Add. 21, 104, f. 874a).

جاد دومین را سومین روز سوم ساعت ز روز عالم افروز

بگاہ چاشت با فیروزی فال ز هجرت ششصد و هشتاد و نه سال

Badáúní follows Khusraw while Nizám u'd-Dín retains the date of Baraní.

because he was a man of retiring disposition and elected to lead the life of a passive spectator during the turmoil which followed the death of Balban. When Jalál u'd-Dín established his power firmly he joined the circle of the scholars of the court and became one of the recipients of royal favours.¹

The scholars, contemporary with our poet at the court of this monarch, were Táju'd-Dín 'Iráqí, Amír Khusraw, Muwayyid-Jajaramí, Mu'yid Divána, Amír Arslán, Ikhtiyár u'd-Dín Bághí, Báqí Khaṭīb, Sa'd-Mantiqí and Mughis Hansaví. Each of them is said to be a poet of high order and an accomplished master in history.² A *Ghazal* written in nineteen different metres is ascribed to the last named. But the works of these scholars, with the exception of Khusraw have not come down to us. Besides the persons mentioned above, Khusraw adds the names of Mawláná Shiháb-u'd-Dín, Qází Siráj, Táju'd-Dín Záhíd and 'Alá'u'd-Dín-'Alí Sháh who reflected credit upon the assemblies of the court with their poetical compositions and philosophical discussions.³

Sultán Jalál u'd-Dín was not only a patron of learned men but also he possessed himself a certain amount of poetic genius. Amír Khusraw pays him a very high compliment for his judicious appreciation of men of talent and says that none of the monarchs of his age had his intelligence or literary taste.⁴ Badáúní has ascribed to him three quatrains, one of these was composed as an inscription for a pavilion he built at Gawálior. It runs thus:—

ما را که قدم بر سرگردون ساید⁵
از توده گِل چه قدر ما افزاید
این سنگ شکسته زان نهادم درست
باشد که دل شکسته آساید

'I whose foot spurns the head of heaven
How can a heap of clay augment my dignity?
I laid right this broken stone in order that
Perchance some broken heart may take comfort.'

Accession of 'Alá'u'd-Dín.—In the year 695 A.H. (A.D. 1296)⁶ was perpetrated one of the most heinous crimes that

¹ Firishṭa, Vol. I, p. 156.

² *Ibid.*

³ G.K., Add. 21, 104, f. 184b.

⁴ *Ibid.*, f. 179b.

⁵ Badáúní, Vol. I, p. 182.

⁶ Baraní, p. 223.

has ever been recorded in the annals of India. It was the murder of Sultán Jalál u'd-Dín by his nephew and son-in-law, 'Alá'u'd-Dín. After the return of 'Alá'u'd-Dín from his Deccan campaign with enormous wealth he persuaded the King through his brother Ulugh Khán to visit him unarmed in his camp at Kara on the bank of the Ganges. The counsellors of the King, suspecting some treacherous design on the part of 'Alá'u'd-Dín, warned him not to risk taking such a step. But the King had such love for 'Alá'u'd-Dín and such great confidence in him that he did not listen to their advice, but went to meet his nephew under the delusive impression of his fidelity on the 17th of *Ramzán*,¹ just as a father goes to see his son. When he landed at the camp, 'Alá'u'd-Dín came forward with some of his nobles and all made their obeisance. The Sultan was highly pleased at his behaviour and began to give him paternal admonitions in the following words:—'You are always dearer to me than my own sons. What fear led you to make me come here during the fast? None can come between you and me. These strangers who are now flocking around you for your gold will run away as soon as they see you with no gold. But my affection and love for you will not diminish even if the whole world turns against you'.² Having finished these words the King held 'Alá'u'd-Dín's hand, and wanted to go to his special boat. At this juncture an assassin, named Maḥmūd-Sálim, at the signal of 'Alá'u'd-Dín attacked the Sultan, and wounded him severely. The King had just strength enough to run towards his boat, crying: 'Oh, ungrateful 'Alá'u'd-Dín! what have you done?'³ And as he was attempting to save himself, another assassin named Ikhtiyár u'd-Dín Húd came and severed his head from his body. It is surprising to find that neither Amír Ḥasan nor Khusráw makes any mention of this tragic event. Probably, both of them being the poets of his court and recipients of 'Alá'u'd-Dín's gold deliberately connived at this incident and praised their patron for his valour and statesmanship. Baraní describes this as one of the most atrocious deeds that has ever been perpetrated since the creation of the world.⁴

After the murder of Jalál u'd-Dín, 'Alá'u'd-Dín proclaimed himself King in his camp. Aḥmad Chap, one of the generals of the late King, did not submit to the usurper, but returned to Delhi with his army. The widow of Fírúz raised her younger son, Qadr Khán, to the throne under the title of Sultan Rukn u'd-Dín Ibráḥim at Delhi.⁵ But this young prince could not

¹ Baraní, pp. 231-35.

² *Ibid.*, p. 234.

³ *Ibid.*, p. 235.

⁴ *Ibid.*, p. 235.

⁵ Ḥasan must have been in his court for some time as we find two poems written in honour of Sháh Rukn u'd-Dín Ibráḥim (D.H., I.O.L., f. 201).

consolidate his power, whereas 'Alá'u'd-Dín by his profuse distribution of gold began to gain the support of the nobles and a few months after the murder of Fírúz he entered Delhi at the head of his army and ascended the throne at the end of the year 695 A.D. (A.D. 1296) at the 'Red Palace' of Balban.¹

'Alá'u'd-Dín was a very presumptuous and ambitious man. He was not satisfied with the kingly crown of Delhi but wanted to equal Alexander in his world conquest and the Prophet Muḥammad in his spiritual domain.² He was, however, discouraged by his supporters in his ambition to be accepted as a Prophet but he was undaunted in his desire to achieve the fame of Alexander. Although he could not execute his plan of world conquests beyond the limits of India, yet he assumed the title of Alexander II. In many of the *Qasidas* of Amir Hasan he is addressed as *Sikandar-i-Sání*³ (Alexander II). This fact has also been corroborated by the evidence of some of the coins and inscriptions of his time. His gold coins struck in 709 A.H. (A.D. 1309) bear the following inscription.⁴

Circular areas:—Alexander II, the right hand of the Caliphate, the supporter of the commander of the faithful.

The legend occupying the full face of the coin:—Sultan 'Alá'u'd-dunyá-u'd-Dín Abu'l-Muzaffar Muḥammad Sháh al-Sultan.

Margin:—This coin was struck at Delhi in the year 709.

Hasan at the court of 'Alá'u'd-Dín.—After the death of Sultan Jalál u'd-Dín, Ḥasan transferred himself to the service of Sultan 'Alá'u'd-Dín Khaljí. He was first introduced to the court by Malik 'Izzu'd-Dín Ulugh-Khán and he refers to this incident in the following verses of a short poem addressed to him.⁵

مرا از ژرف دریای خطرناک
 تو آوردی برون چون گوهر پاک
 پس اندر صدر دولت راهدادی
 محل دست بوس شاه دادی

¹ Baraní, pp. 246-47.

² *Ibid.*, pp. 262-271.

³ D.H., I.O.L., ff. 23, 26, 36, 40a, 42a, 43a, 51b.

⁴ Thomas's 'The Chronicle of the Pathan Kings of Delhi', pp. 168-174. Hasan also addresses him as Yamin-u'l-Khiláfat, or the Right hand of the Caliphate, in the following verses:—

تو بی خلافت بحق دست یاب یمن الخلاف از آن شد خطاب

(D.H., I.O.L., f. 246).

⁵ D.H., Bdl. (Ousley, 122), f. 280.

ز سلطان گنج آوردی و تشریف
 عطای خود به آنجا کردی تضعیف
 سر بختم تو بگرفتی ز خفتن¹
 من این را کی توانم شکر گفتن

'From the depth of a perilous sea
 You have brought me out like a pure pearl;
 Then you have introduced me to the court,
 You gave me the honour of kissing the hand of the
 King;
 You have brought me wealth and honour from the King,
 (And) doubled it by gifts of your own,
 You have raised my fortune from its sleep,
 How can I offer thanks to you for all these things?'

Here at the court of this king we find Ḥasan at his best; and this is the most fruitful period of his life, when he completes his *Diván* and attains great fame as an eminent poet. Ziyá Baraní, the contemporary historian of our poet, says: 'Amír Ḥasan Sijzí was a unique figure among the poets of the time of 'Alá'u'd-Dín'.²

Promotion of learning during 'Alá'u'd-Dín's reign.—The reign of 'Alá'u'd-Dín from A.H. 695–715 (A.D. 1295–1315) is one of the most flourishing periods of Indo-Persian literature. Delhi, under 'Alá'u'd-Dín, possessed one of the most brilliant bands of savants, the like of which we fail to find even in the court of his successors, the great Mughals. The activities of these scholars were not confined to any particular system of learning but were diffused over various branches of mundane and spiritual sciences. Baraní³ mentions the names of forty-six scholars of great repute who have devoted their time and energy to the development of traditional and rational sciences; and large numbers of students used to flock round them to receive instruction in these branches of learning. The same historian remarks in another place that each of these men could compete with any of the learned scholars of Bukhárá, Samarqand, Baghdád, Egypt, Khívá, Damascus, Tabríz, Ispahán, Ray and Iconium. Besides these scholars, so highly spoken of by the historian, there were other men of talent who turned their attention towards the development of the science of

¹ This verse in the MS. is written as سر بختم پر کردی ز آن حسن. But it does not conform to the metre so I have adopted the above reading.

² Baraní, p. 360.

³ *Ibid.*, p. 353.

Qir'at (reading of the Qur'an), the arts of preaching, poetry, History, and the sciences of Medicine, Astronomy, Astrology and Necromancy, so that we find during this period an all-round development of Indo-Persian culture.

Of the Readers of the *Qur'an*, Mawláná Jamál u'd-Dín Shátbí, Mawláná 'Alá'u'd-Dín, and Khwája Zakí, a nephew of Hasan of Basra, obtained very great reputation throughout the length and breadth of the country. The most noteworthy preachers of the time were Mawláná 'Imád u'd-Dín Husám Darvish, Mawláná Ziyá u'd-Dín Sannámí, Mawláná Karím u'd-Dín and Badr u'd-Dín of Oudh. They used to deliver weekly lectures on religious and spiritual subjects to large congregations. The efforts of these scholars had brought about a change in the mental outlook of the people of the capital and contributed a great deal for their moral advancement.

'There were poets', says Baraní, 'in the reign of 'Alá'u'd-Dín, such as never existed before or after'.¹ Besides Hasan and Khusraw, who headed the list, there were other men of high poetic talent, such as Šadr u'd-Dín 'Alí, Fakhr u'd-Dín Qawwás, Hamíd u'd-Dín Rájah, Mawláná 'Arif, 'Ubaíd Hakím, Shiháb Anšári, and Šadr Bustí, who adorned the court of Delhi. Each of these poets was in receipt of allowances from the state and each one of them is said to have left us a *Diván*.²

Of the historians at the Court of 'Alá'u'd-Dín there were two men noted for their proficiency in this branch of learning. One is Amír Arslán-Kuláhí and the other Kabír u'd-Dín, son of Táj u'd-Dín 'Iráqí.³ Amír Arslan had such a wonderful memory that when 'Alá'u'd-Dín asked him any question on the history of the past kings he could enlighten him on these points without any reference to the texts. Kabír u'd-Dín was held in great esteem by the Sultán, and was appointed to the post of the Chief Judge of the Imperial Army.⁴ He wrote a history of the reign of 'Alá'u'd-Dín describing in detail all the conquests and achievements of his sovereign. Baraní has used it as one of his sources for the *Ta'ríkh-i-Firúz-Sháhi*. But he complains that this history is rather a eulogium than a mere statement of fact. All the defects of 'Alá'u'd-Dín's administration have been deliberately suppressed and his achievements and character have been extolled beyond limit. We cannot blame this historian for his one-sided view, as he had to present every part of this history to the Emperor for his approval, so that he had to guard against writing anything which would incur the displeasure of the monarch.⁵

¹ Baraní, p. 359.

² *Ibid.*, p. 361.

³ *Ibid.*, p. 361.

⁴ *Ibid.*, p. 361.

⁵ *Ibid.*

The science of Medicine was studied equally with other branches of learning. A large number of skilful physicians grew up at the capital and people of different castes and creeds—the Brahmins, Jāts and the Muslims—took keen interest in the development of this science. Among the physicians of Delhi, Mawláná Badr u'd-Dín-Damashqí occupied the highest position. He not only attended to his patients but often used to give instruction to other physicians of the city. His proficiency in his profession was so high that he could diagnose any disease by examining the pulse of the patient and could say whether a particular ailment was curable or not. There was also another group of scholars who devoted their time and energies to the development of the sciences of Astronomy and Astrology. The services of this group were equally appreciated by the king as well as by the nobility. The chief of the astronomers of the Court was Mawláná Sharaf u'd-Dín who was granted a substantial allowance and the income from several villages, by the Sultán.¹

The Persian spoken and written in India during this period was much purer than that found during the later Mughal days. The early emigrants retained the purity of their tongue, which their successors failed to do. The following interesting account of the Indo-Persian language has been given by Amír Khusraw: ²

‘The singers of the land of Hindustán, particularly the emigrants who have settled at Delhi, surpass all the scholars of the world in their attainments. Therefore no Arab, Khurásání, Turk, Indian, nor any other who comes to the Muslim cities of India and spends his whole life in places like Delhi, Multán and Lakhnawtí, and not in places like Gujarat, Málwa and Deogír, the land of Hindu idolatry, suffers deterioration in his own language. Assuredly he speaks according to the standard of his own country. For example, if he is an Arab, he is the master of his own language only, and he cannot lay a proper claim to the language of others; his broken speech is a proof of his foreign origin. If a Hindu citizen or a villager continually lives and mixes with the inhabitants of Delhi, yet there is imperfection in his Persian. A Khurásání, ‘Iráqí, Shírází or a Turk, however intelligent he may be, commits blunders in the Indian language, even if he burns many a midnight candle and claims eloquence in an assembly, yet at the end he stumbles and breaks down. But the Munshis (secretaries) born and brought up in Indian cities and particularly at Delhi, with but little practice, can speak and understand the spoken language (of others) and also obtain a command over prose and verse; they can adopt the style of every country they visit. And it has been fully proved from experience, that many

¹ Baraní, p. 363-64.

² G.K., Add. 21,104, f. 155.

of our people who have never been to Arabia, have acquired an eloquence in the Arabic language such as has not been achieved by the scholars of Arabia themselves who take lessons from the flow of their language. The Arabs, in spite of being eloquent in their own tongue, have not ability to learn our Persian correctly.

'I have seen many a Tázik¹ and Turk who learn Turkish with industry and erudition in India; and they speak in such a way that the eloquent men of this tribe who come from their original home are astonished at it. In the case of the Persian language, which has been derived from the Persians, there is no other correct style than the style of Transoxiana, which is the same as that of Hindustán. Because the Khurásánís pronounce the word چه (cha) as چی (chí) and some of them read کجا (kujá) as کجو (kajú) but in writing they write چه (cha) not چی (chí) and کجا (kujá) not کجو (kajú). The correct pronunciation is that denoted by the spelling. There are many words like these which are pronounced in one way but wrong if written so. But the Persian speech prevalent in India, from the bank of the Indus to the coast of the Indian ocean is everywhere the same.' It is evident from this account that the standard style of Persian adopted in India was that of the Transoxiana.²

After describing the state of science and literature during 'Alá'u'd-Dín's reign, Baraní complains that the Sultán did not show proper consideration for the merit of the scholars of his time. If these scholars had remained at the Court of Maḥmúd or Sanjar each of them would have been rewarded with the

¹ The word Tájik or Tázik is used by different writers in different senses. The early Armenian writers applied it to the Arabs. Modern Armenians have imposed it on the Turks and the Turkish empire and even on Muslims in general. Prof. Nöldeke has suggested that Tájik (better Táchik) and Tází are the same word, the former being merely the older form. *Chik* means 'belonging to' and in this case 'belonging to the tribe of Tai'. In modern Persian *Chik* becomes *Zi*. D'ohsson says, 'The Mongols gave the name of Tájik, or Tázik to the Muhammadans, and in the historical works of this period it will be found that they employed this word in opposition to that of "Turk"'. The first served to designate the Muhammadan inhabitants of towns and cultivated lands, whether they were of Turki, Persian or Arab origin mattered not.' (Vide Ross and Elias's Introduction to *Ta'ríkh-i-Rashídí* pp. 85, 87, 90-91.) I think Khusraw has used this term in the sense of Persian speaking Turkestáni.

² It is after Sikandar Lodí's accession to the throne in A.D. 1489 that the Hindus began to study Persian to qualify themselves for employment in the government offices, since then we find an increasing difference in the style of India and Persia proper. (Firishta, Vol. I, p. 344):—

و کافران بخواندن و نوشتن خط فارسی که تا آن زمان در میان ایشان معمول

نمود پرداختند *

income of a principality. But in spite of this alleged indifference of the king, we find his reign to be one of the most flourishing periods of Indo-Persian scholarship. Baranî calls it one of the wonderful phenomena of his time, which he fails to explain, and he has rather exaggerated the king's indifference. It is of course true that the king did not squander money on men of letters as some of the oriental potentates do, but we cannot say that he was entirely without generosity to them. His bounty was regulated by a consideration of the economy of the state and consequently he paid the poets of his court what he considered to be most reasonable. Khusraw, in describing the character of the king, refers to the principle of moderation that always governed his actions, in the following words:¹

'The characteristics of his august nature are in accord with the canons of wisdom; his anger is like a pleasant fire that cooks, but which does not burn the world; his mercy is like that of a fresh breeze that raises no dust; his disposition is like water that pleases, but does not drown; and his generosity is like a mine that produces wealth but destroys it not.'

The development of art and literature during 'Alâ'u'd-Dîn's reign, may be ascribed chiefly to two causes: first, to a strong and stable central government² and a general peace and prosperity in the country, which led to the growth of a leisured class that could devote its time to the promotion of learning; and secondly, to the gradual increase in the number of emigrants from Irân to India; these emigrants by this time had made India their permanent home and, living under a more settled and peaceful government, could transmit their heritage to Indo-Persian culture. A very interesting account of the general peace and prosperity of the country has been left to us by Amîr Khusraw, a study of which gives us a true picture of the age. I am quoting below a few of its passages:—³

'How excellent! The carpet of peace and tranquillity is spread over the whole domain, for from the forts of Delhi to the courtyard of Khurâsân, a carpet of ruby-coloured satin has been laid with the blood of the red-faced chinese, so that every rebellion and disturbance have fallen low.

'In one direction the mountain-like army of Chingîz-Khân has been driven beyond the Oxus by the hurricane of his Majesty; and in the other direction not only have the powerful *Râis* of India, who with their thousands of elephants used to trample the ranks of the Turks, been forced to surrender their elephants and their wealth, but some of them who still held their heads

¹ I.K., Vol. I, p. 39.

² For details of the administrative regulations and the strength of the Government, see Baranî, pp. 304-325; and C.H.I., Vol. III, Ch. V.

³ I.K., Vol. I, pp. 16-22.

up were crushed in such a way that their heads were thrown like oilcans under the elephant's feet.....

'In affairs relating to the spread of justice and welfare of the people, his bright intellect has formulated such laws as could never be seen in the mirror of Alexander's imagination or in the cup of Jamshid. For the purpose of cheapening corn, which is the leaven of one's sustenance, he made such regulations by his balanced judgment, that if for years the wandering cloud does not rain, the hot-tempered wind does not blow, the red-faced earth does not grow any verdure, and the scorching sun fails to ripen the crops, he can feed the entire people from the royal granaries..... And other necessities of the people, even if they be red-sulphur or white ruby, have been rendered by him easily available and cheaper than yellow amber and red-grape-stone. And money which is the elixir of desire and the treasure house of cherished objects, has been made so cheap by his elephant-loads of gifts and charities, that the dearness of the price of a thing is never felt by any person, so that complete peace and prosperity prevail in his dominions

'The administration of his justice is always bringing good fortune upon his subjects. Owing to the general peace and prosperity during his auspicious reign, the weapons of war are lying idle in every direction..... The dagger of the believer, which was cleaner than the heart of a Sunni, has become rusted like the iron heart of a pagan..... The roads are more secure than the veil of chastity worn by virtuous ladies. The districts are free from anxieties like contented children in the lap of a kind mother..... The dawn of the King's fortune has nothing to do but to bestow favour over the world, and the canopy of his evening has no other work but the distribution of peaceful sleep among the children of Adam.....'

In a similar way Ḥasan also refers to the general peace and prosperity of the country in some of his poems addressed to 'Alá'u'd-Dín. In one place he says:—

حشم از جاهش افزوده خدم از جودش آسوده¹

ستم در عهدش آواره جهان از عدلش آبادان

'His grandeur augments the retinue, his generosity satisfies the servants,
His reign has banished oppression, the world abounds with his justice.'

In another place he says :—

ای بزمان دولتت گرگ مربعی رمه¹
وی بضمان رحمت ماه رفوگر کتان

‘O, thou! In thy reign the wolf is the guardian of the flock,

Under thy protection the moon is the mender of linen.’

Intimate Association of Hasan with Nizám u'd-Dín Awliyá.—During the reign of ‘Alá’u'd-Dín, we find Hasan in closer association with Shaykh Nizám u'd-Dín Awliyá. Although he came in contact with the Shaykh at a time much earlier than this, his acquaintance with him was casual rather than intimate. The incident which brought about a change in Hasan’s life and caused him to be one of the most favoured disciples of the Shaykh has been described by Mawláná Shiháb u'd-Dín Imám, a contemporary divine, in the following way:—²

‘One day the Shaykh went to visit the shrine of Khvāja Qutb u'd-Dín Bakhtiyár-Kákí at old Delhi. I myself and Mawláná Burhán u'd-Dín Gharíb were in the company of His Holiness. After visiting the shrine, we happened to pass by the tank known as Hawz-i-Shamsí, in order to visit the tombs of some other saints. At this place, Khvāja Hasan the poet, the son of ‘Alá’-i-Sanjari (Sijzi), who had been known to the Shaykh for some time past, was engaged in drinking wine in the company of his friends. When he saw the Shaykh, he came forward and recited the following verses:—

سالها باشد که ما هم صحبتیم گر به صحبتها اثر بودی بکاست
زهدتان فسق از دل ما کم نکرد فسق ماها بهتر از زهد شماست

‘Many a year have we passed in thy company
If companionship has any influence, where is it?
Thy virtue removed not vices from our minds,
Our vices are better than thy virtues.’

‘When the Shaykh heard this, he replied: “Companionship has its influence, if God wills, it will be effective one day.” This remark of the Shaykh produced such an impression on his mind that he immediately fell at the feet of the Shaykh and made a confession of all his sins and became a staunch disciple of the Shaykh along with all his companions.’ A reference to his

¹ D.H., I.O.L., f. 44b.

² S.A., Or. 215, f. 153a.

penitence at an advanced age has been made by the poet in one of his Qitās where he says:

ای حسن توبه آنکھی کردی که ترا قوت گناه نماند¹

'O, Hasan! thou hast made penitence at a time
When no strength was left in thee to commit sin.'

He was initiated into the circle of discipleship of the Shaykh in A.H. 707 (A.D. 1308) when he was fifty-six years of age.² The date of this initiation has been given by him in the Favá'id u'l-Fu'ád, where he says:³ 'On Sunday the third of Sha'bán A.H. 707 (A.D. 1308) this humble sinner, Hasan 'Alá'-i (*Sijzi*) the builder of this edifice and the compiler of these mysteries, obtained the felicity of kissing the feet of that King of heavenly dignity and of divine wisdom on this very day, by the splendour of the glance of that incomparable chief of the saints of illuminated soul, he (Ḥasan) obtained purification from the contamination of the four elements; and his head was adorned with the four cornered cap⁴ of the Saviour of Saints.' On this occasion the poet composed a *Ghazal* in which he says:

حسن امروز سر اندر قدم شیخ آورد

خنک آن بنده مقبل که بدین شاه رسید

'Hasan placed his head to-day, at the feet of the Shaykh,
Happy is that fortunate slave who reached this King.'

Since this time we find Ḥasan a constant visitor at the monastery of the Shaykh except for a period of eight months in the year 716-17 A.H. (A.D. 1316-17), when he was absent from Delhi and went to Deogír with the imperial army.⁶ During

¹ D.H., I.O.L., f. 227a.

² Some authorities differ as to his age at this time, e.g., The Ency. Isl. says: 'At the age of 53 he became a *Murid* of Niẓám.' The Arabic History of Gujarát (p. 858) and the *Safinat u'l-'Arifin* (Or. 213, f. 22b) say that he became a *Murid* at the age of 73. But the statement of Ḥasan quoted above shows that all these authorities are wrong in their inference.

³ F.F., Or. 1806, f. 2.

⁴ A special type of cap worn by the Ṣúfís of the Chishtiya order in India to which the Shaykh belongs.

⁵ D.H., I.O.L., f. 137b.

⁶ F.F., Or. 1806, f. 91. This is an expedition led by Quṭb u'd-Dín Mubárák-Sháh against Harpál Dev of Deogír who rebelled against the Imperial authority. The date of the expedition is variously given. Baraní (p. 389) says it was in A.H. 718 (A.D. 1318). Amír Khusraw says (*Nuh Sipihr*, Add. 21, 104, f. 675a), it was in the year of the accession of Quṭb u'd-Dín to the throne in A.H. 716 (A.D. 1316). Ḥasan says that he returned from this expedition on Thursday the 12th of Muharram A.H. 717 (28th March, 1317), after spending eight months in the camp. According to this account the expedition must have been led sometime

the period of his intimate association with the Shaykh, he compiled his prose book known as the *Favá' id u'l-Fu' ád*, consisting of the utterances of the Awliyá made in different evening assemblies, which will be discussed in a later chapter. The compilation of this book was considered a mark of special distinction, conferred upon Hasan by his spiritual guide, which aroused the jealousy of his friends. Even Amír Khusraw often used to say: 'Would that the honour and distinction of compiling this book had fallen on me and that all my works were attributed to Khvájá Hasan.'¹ The poet was very highly esteemed by the Shaykh, and often poems composed by him were sung by the *Qawwáls* or mystic singers at the assembly of *Samá'* (ecstatic dance), at the monastery, in which Hasan and his friends used to join.² The *Siyaru'l 'Arifin* gives an interesting description of the assembly of *Samá'* and the part played by our poet in these words:³

'Whenever the King of the saints wished to listen to an ecstatic song Khvájá Khusraw would begin by reciting a *Ghazal*. Amír Hasan would sit on the right of Khvájá Khusraw and Mubashshir on the left. The above mentioned Mubashshir was a slave purchased by the Shaykh, who had in his elegant voice something of the melody of David. Khvájá Khusraw and Khvájá Hasan were unique in the art of music and unequalled for their sweetness of voice. There were two hundred *Qawwáls* in the service of His Holiness, who could bring down the birds of the air by their song, and there was also a large number of men of perfection and Súfis of high station. When Khvájá Khusraw would recite a *Ghazal*, Khvájá Hasan and Mubashshir would immediately sing in unison the couplet of which His Holiness would show his approval and then His Holiness would come into a state of ecstasy and listen to the *Samá'*.'

Shaykh Nizám u'd-Dín was a man of very strong character, never to be tempted by material gain, in spite of the hard times he had so often to face. There were occasions when he had to go without food and suffer penury and distress, yet he would not condescend to beg any favour from the kings or the nobles of the court, but relied entirely upon God. He would of course accept what was offered to him without being asked for and spend it on the poor. His whole life was dedicated to the service of humanity and all his actions were governed by a spirit of universal love for mankind in general. These traits of the Shaykh greatly influenced Hasan's life. He tried to follow

in Jamád I, A.H. 716 (July, 1316). This being the testimony of a person who accompanied the campaign seems to be more reliable than those of others.

¹ S.A., Or. 215, f. 154a.

² M.G., Or. 4610, f. 101.

³ S.A., Or. 215, f. 139b-40a.

in the footsteps of his spiritual guide; and whenever he was faced with any problem of daily life which he was unable to solve or had some doubts as to the righteousness of a certain course of action he proposed to take, he would ask the direction of the Shaykh and do it accordingly. Once when the poet was offered a gift by a friend of his, he did not know what to do, and so came to the Shaykh and asked the following question:—¹ 'This slave has never asked nor did expect anything from any person at any time of his life, but if a person shows kindness and offers a gift what should be done?' The Shaykh replied, 'It should be accepted.' Then he acted accordingly. Ziya Baraní in describing the character of our poet says: 'For the observance of the rules of contentment, for the purity of his faith, and for the happiness he feels without any material comfort, and for the outward separation and the inward solitude from the attachment of the world, I seldom saw a man like him. He was such an amiable, pleasant, ingenious, polite and cultured man that nowhere else could I get that amount of pleasure and comfort which I used to enjoy in his company.'² These characteristics attributed to him by the historian are more or less a replica of the common traits of his spiritual guide, impressed upon him during the course of his long association with him.

The relation of the Shaykh with the reigning monarchs of his time was cordial except with Sulṭán Qutb-u'd-Dín Mubárah-Sháh and Ghiyás u'd-Dín Tughlaq. It seems that both these sovereigns suspected him of having taken part in political intrigues against them. No direct charge could be brought against him, but the frequent visits of the nobles and some of the princes to his monastery led these kings to look upon him with some concern, especially as there are instances of holy men taking part in conspiracies during the reign of their predecessors, particularly at Multán and Delhi, where Bahá u'd-Dín-Za Kariya³ and Sídí Mawla⁴ were connected with dastardly plots against Sultan Násir u'd-Dín Qabacha and Jalál u'd-Dín Khaljí respectively.

The unfavourable attitude of Qutb u'd-Dín Khaljí towards the Shaykh arose out of the conspiracy organized by his cousin Malik Asád u'd-Dín Yaghrish Khán who wanted to deprive the King of his throne. The plot was, however, disclosed to the

¹ F.F., Or. 1806, f. 67.

² Baraní, p. 360.

³ F.F., Or. 1806, f. 119. The plot against Qabacha has been mentioned by Nizám u'd-Dín Awliyá in one of his discourses where he says that Bahá u'd-Dín Zakariyá and the Qázi of Multán were involved in the conspiracy. The plot was discovered by the sulṭán; the Qázi was hanged but Bahá u'd-Dín managed to get himself extricated from the charge of the crime.

⁴ Baraní, pp. 208-12.

Sultan by one of the conspirators and he seized Asád u'd-Dín and put him to death with all his family and confederates. The Sultan was not satisfied with the death of the conspirators but he sent an officer to Gawálior to put to death Khizr Khán, Shádí Khán and Shiháb u'd-Dín, the sons of 'Alá' u'd-Dín Khaljí, who had already been blinded by his previous orders. Thus he put an end to all his rivals to the throne.¹ As Khizr Khán was one of the most devoted disciples of the Shaykh, the King thought that he was implicated in the plot against him in order to place his disciple on the throne; and from that time he began to bear grudge against him. He tried to lower the Shaykh in the estimation of the people, ordered his officers not to visit his monastery, and, as a sign of open hostility, he invited Shaykh u'l-Islam Rukn u'd-Dín of Multán to Delhi, and set up another saint named Shaykh Záda-Jám as a rival of Nizám u'd-Dín at Delhi. He went so far as to declare a reward of one thousand gold *tankas* to any man who would bring him the head of the Awliyá.²

At this time Hasan was sent by the Awliyá to Shaykh Ziyá u'd-Dín Rúmí, the spiritual director of Qutb u'd-Dín, with a message asking him to request the Sultan to cease his persecutions. But Hasan could not deliver the message to him as Shaykh Rúmí was confined to bed with an attack of colic. He died of this illness a few days after Hasan's arrival, and his death put an end to any hope which Nizám u'd-Dín had of his intercession.³ The King was obdurate in his determination to humiliate the Awliyá and he ordered him to attend the court in person and make obeisance at the beginning of every month. The Shaykh refused to comply with this order, and the King intended to use this refusal as a pretext for wreaking vengeance upon him. But before the day fixed for his attendance at the court, the murder of the Sultan by the Barwar rebels saved the Shaykh from this personal humiliation.

After the murder of Qutb u'd-Dín when Khusraw Khán usurped the throne, he distributed gold to different saints in order to get their moral support; some of them accepted his offers and some refused. A sum of five hundred thousand *tankas* was given to Nizám u'd-Dín, which he accepted and distributed among the poor.⁴ When Sultan Ghiyás u'd-Dín

¹ Baraní, pp. 393-94.

² *Ibid.*, p. 396.

³ S.A., Or. 215, f. 142.

⁴ *Ibid.*, Or. 215, f. 154a. The question may be raised why the saint being a man of strong moral character and always professing to be free from worldly temptation, accepted the ill-gotten money from Khusraw Khán. The principle on which he acts on such occasions may be gathered from his views on 'Income and expenditure', expressed in one of the discourses of the *Favá'id u'l-Fu'ád* where he says: 'A man should not beg of anything; neither should he speak out nor think in his mind that so-and-so would give him a certain thing. But if a thing is offered to

Tughlaq had overpowered Khusraw Khán and ascended the throne he wished to recover all the money distributed by the usurper. All the Shaykhs but Nizám u'd-Dín, who retained the money in safe custody to return it to its lawful owner, complied with the demand of the Sultan. But Nizám u'd-Dín, having spent the whole amount on the poor could not do so. He replied: 'It was a public property which had gone to the deserving ones. I have not spent a single farthing of it on my account.'¹ This incident had brought about a strained relationship between the King and the Shaykh. The King, at the instigation of some of his enemies, brought a charge of heresy against him for performing *Samá'* (ecstatic dance) accompanied by music, which is against the canon of orthodoxy. He was brought before an assembly of the doctors of divinity, where he was asked to explain his conduct. After some discussions, the Sultan was convinced of the legality of *Samá'* and he was allowed to go free.² But the King did not forgive him for his inability to return the money received from Khusraw Khán to the public treasury, and this strained feeling grew more tense when Prince Muḥammad Jawna became a great admirer and disciple of the Shaykh. It is narrated by Ibn Baṭūṭa how on one occasion the Shaykh in a state of ecstasy said to the Prince, 'We give you the Kingdom'.³ These reports of the Prince's association with the Shaykh must have been carried to the Sultan and inflamed his wrath. While the Emperor was returning from his Bengal expedition, he issued an order asking the Shaykh to quit Delhi before his entry into the capital. The Shaykh is said to have replied to this message, '*(Hanúz Dīhlī Dūr ast)*' 'Delhi is still far off'.⁴ It so happened that the King was killed by the collapse of a new pavilion built for his reception at Afghánpúr near Tughlaqábád, and he could not return to the capital.⁵ The death of the King is popularly

him without being asked and hoped for, then it is lawful to him. A certain great man has said "I never ask for a thing nor do I entertain any hope from any one but whoever offers me a thing I accept it even if the donor be a Satan".' (F.F., Or. 1806, f. 23.)

¹ S.A., Or. 215, f. 154b.

² S. Aul., Or. 1746, ff. 132-33. Ḥasan also refers to the accusations made by the Shaykh's enemies for performing *Samá'* in A.H. 720, the year when Ghiyāṣ u'd-Dín Tughlaq ascended the throne. (F.F., Or. 1806, f. 125a.)

³ Ibn Baṭūṭa, Vol. II, p. 39. مَبْنَاكَ الْمَلِكُ

⁴ A.H.G., p. 862.

⁵ Baranī, p. 452. Some of the historians suspect that the fall of the pavilion was designed by Muḥammad Tughlaq. Badáúnī and Nizám u'd-Dín accuse Baranī for the suppression of this fact which he did not mention for fear of Firúz-Sháh's displeasure. But Ibn Baṭūṭa (Vol. II, pp. 39-40) states on the authority of an eye-witness, Shaykh Rukn u'd-Dín, that the pavilion was constructed with materials of timber by Aḥmad Ayáz, the Inspector of buildings, in such a way that it would collapse at any

ascribed to the displeasure of the saint and his reply on this occasion is still used as a proverb in India.¹ The Awliyá also died a short time before the death of Ghiyás u'd-Dín, on Wednesday, the 17th of *Rabí* II, A.H. 725 (A.D. 1325).²

After the death of Nizám u'd-Dín Awliyá, we do not hear anything further of Hasan's activities. His biographers have nothing to say on this period of his life except that at the time of the transference of the capital from Delhi he was forced by Sultán Muḥammad Tughlaq to migrate to Dawlatábád, where he died. It is quite probable that during this period of his old age he was leading a life of devotion in complete seclusion from the troubles of the world. And as he led the life of a bachelor he left no issue to continue his lineage.³ The only heritage he has left to the world consists of his melodious lyrics, of which the poet himself says:—

‘زر ذخیره ماند و سیم از هر کسی
از حسن اوصاف خوبان یادگار

‘Every person leaves behind him a store of silver and gold

Hasan leaves behind him the description of the lovely ones.’

II. HIS WORKS.

His extant works.—According to Ziyá Baraní⁵ Amír Hasan was the author of several *Díváns* and a number of *Maḡnavís* and other prose works. This statement has also been affirmed by several of the biographers and historians of the later period.⁶

moment if elephants were allowed to trot on one of its sides. The whole reception was arranged by the prince and as soon as the elephants were brought for display, the entire building fell on the King and thus compassed his death. This account of Ibn Baṭṭa confirms the suspicions of Badáúní and Nizám. Besides this we find that Ayáz was elevated from the position of an Inspector of buildings to that of the minister as soon as prince Muḥammad became king.

¹ Prof. Habib in his *Life of Amír Khusráw* is inclined to disbelieve the story of the strained relationship between the Shaykh and the Sultan Ghiyás u'd-Dín. He calls it a later-day fabrication. But from the facts and the narrative of Ibn Baṭṭa stated above it appears that there were sufficient reasons for the existence of strained relationship between them.

The Glossary of the Tribes and Castes of the Panjab (Vol. I, pp. 492-93) wrongly attributes this unhappy incident to Emperor Jalál u'd-Dín Khalji. It was not Nizám u'd-Dín but Sídí Mawla with whom Jalál u'd-Dín had some unpleasant relation. (*Vide* Baraní, pp. 208-212.)

² S.A., Or. 215, f. 158.

³ S.Ar., Or. 213, f. 22b.

⁴ D.H., I.O.L., f. 155b.

⁵ Baraní, p. 360.

⁶ *Firishta*, Vol. I, p. 214; J.N.U., p. 712.

But none of them give definitely the exact number of his works. The extant works are, his *Diván* and the prose book known as the *Favá'id u'l-Fu'ád*. He is also said to have written another prose work entitled *Siyar u'l-Awliyá* (lives of saints), and Taqí Káshí ascribes to him a commentary on some of the *Qasídas* of Kháqání.¹ The only *Diván* known to us was compiled by him when he was sixty years of age, and contains only that portion of his work that was written during the thirty years,² preceding 714 A.H. (A.D. 1314), the date of its completion. The works produced during a period of another twenty years of his life, except for a small piece of prose, *Marghiya*, written on the death of Khán-i-Shahíd, the eldest son of Balban, have not come down to us. His extant works also fail to throw light on the nature of his earlier compositions. The *Diván* in its present form also might have been lost to us, since the poet himself says that he had no intention of collecting these poems until he was persuaded to undertake it by the insistence of his friends and associates.³

There are eighteen⁴ known manuscripts of the *Diván* of Hasan, preserved in the various libraries of Europe and the East. Four are in the Bodleian Library, Oxford; five in the library of the India Office; two in the British Museum, and one in each of the libraries of Manchester, St. Petersburg, Munich, Berlin, Gotha, Bankipore and Oudh. No attempt to publish the manuscripts has ever been made in the West, except that Nathaniel Bland has published ten select *Ghazals* of Hasan in his 'Century of Persian Ghazals' in A.D. 1851.⁵ I give below a chronological table of these manuscripts in order to facilitate reference to various libraries and to give guidance in the compilation of a standard text on a scientific basis in the future.

¹ K.A.Z.A., I.O.L. No. 667, f. 541a.

² D.H., I.O.L., f. 2a. در عهد حیاتی آنچه مدت سی سال جمع شده بود دیوانی تمام شده است - اکنون اتفاق آن شده بود که اندرین سال از جواهر زواهر غیبی و لآلی لاریبی در سلک کلک آمده نثار اصحاب فضل و ارباب حکمت گردانیده اند - امید آنکه بعین عنایت نظر فرمایند

³ D.H., I.O.L., f. 2a. که اغلب حدود چند دوستان بود و عدد همت منشینان که این مصائف ترتیب یافت اگر نه بنده را تکلیفات نباشد و اشعار شاعری رسمی را مراعات نکنند

⁴ To this we may add the five MSS. of Hyderabad brought to our notice after the completion of this thesis.

⁵ An edition of the *Diván* based on the five MSS. of Hyderabad has been lithographed at Hyderabad in 1933 A.D.

No.	Catalogue mark of the MSS.	Date.	
		A.H.	A.D.
1	Elliot 121, Bodl. Lib., Oxford	839	= 1435
2	Ouseley 122, Bodl. Lib., Oxford	862	= 1458
3	Ryland Library Pers. MSS. 855, Manchester ..	913	= 1507
4	Or. 10918, Br. Museum	919	= 1513
5	Add. 24952, Br. Museum	922	= 1526
6	J. Aumor, Cat. Pers. MSS. 66, Munich ..	941	= 1534
7	I.O.L., No. 1223	943	= 1536
8	Bankipore Public Library, No. 132	1025	= 1616
9	Thurston 15, Bodl. Lib., Oxford	1033	= 1623
10	Berlin Cat. Pers. MSS. No. 836	1056	= 1646
11	Elliot 57, Bodl. Lib., Oxford	—	—
12	I.O.L., No. 1224	—	—
13	I.O.L., No. 1225	—	—
14	I.O.L., No. 1226	—	—
15	I.O.L., No. 1227	—	—
16	St. Petersburg Public Library, No. CD ..	—	—
17	Gotha Pers. MSS. No. 43-44	—	—
18	Sprenger, Oudh Cat. No. 247	—	—

Of all the MSS. referred to in the above table the Bodleian Library possesses two of the earliest copies yet discovered. But of these two, the earliest one is defective and incomplete.¹ The other copy,² which is about twenty-three years younger than the preceding one, contains the largest collection of verses that has ever been met with in any copy of the *Diván*. Besides the *Qasidas*, *Ghazals*, *Qit'as*, *Rubá'is* and a few short *Maḡnavis* found in almost all the existing copies, it has a romantic *Maḡnavi* called *Hikáyat-i-'Ashiq-i-Nágúrí*, a pleasing love-poem which will be discussed later. Among the other MSS., the British Museum, India Office and the Bankipore copies contain the largest collection of poems, corresponding almost to the Bodleian copy with a slight variation in the order of arrangement.

Contents of the Diván.—A comparison of the available copies of the *Diván* shows that it consists of a little over ten thousand couplets containing *Qasidas*, *Ghazals*, *Qit'as*, *Rubá'is*, *Maḡnavis* and *Hikáyat*. Let us now consider the different forms of his poetry.

Qasidas.—In most versions the *Diván* opens with a *Qasida* in praise of God with the following initial verse:—

ای حاکم جهان و جهان داور حکیم
حدث همه بدائع و تو مبدع قدیم

¹ Elliot 121, Bodl. Library.

² Ouseley 121, Bodl. Library.

‘O, Lord of the universe, and the wise Judge of the world,
Everything is a creation and Thou art the eternal source.’

But the copy of the Bankipore *Diván* opens with a *Qaṣida* called *Khamṣín*, which is not to be found in other copies. It begins with the couplet ¹:—

ای بَصَفِ صَنعِ تو پویان شده چرخ برین
این کره جز داغ تسلیمت ندارد بر جبین

‘O, Thou, in the line of Thy handiwork revolves the crystalline sphere,

This colt possesses on its brow nothing but a brand of submission to Thee.’

In this *Qaṣida* the poet gives three reasons for calling it a *Khamṣín*: it consists of fifty verses; it was composed in the fiftieth year of his age; and thirdly it contains the names of fifty holy men through whose intercession he supplicates for favour from God. After this *Qaṣida* begins the usual *Qaṣida* with the initial verse mentioned above corresponding with the copies mentioned in Rieu, p. 618, Sprenger Oudh Cat., p. 418; *Ethe Bodl. Cat.* No. 780-81; *I.O.L.* No. 1223, and other catalogues.

There are about one hundred *Qaṣidas*,² one-fourth of which are devoted to the praise of God and the Prophet, and to moral and religious topics; the rest of the poems, with the exception of a very few, are written in honour of Sultan ‘Alá’u’d-Dín Khaljī, the reigning sovereign of the time, and the principal patron of the poet. Four *Qaṣidas* are addressed to Ulugh Khán, the brother of the Sultan, and one each to prince Khizr Khán and Sultan Rukn u’d-Dín Ibráhīm Sháh³ respectively.

These poems deal mainly with the pomp and power of ‘Alá’u’d-Dín and the achievements of his reign; in them the

¹ C.P.B., Vol. I, p. 197. I have not been able to procure a copy of this *Diván* in England, so I had to rely for all these informations on the description given in the catalogue of the Library. This copy was transcribed in A.H. 1010 = A.D. 1601 for Shaykh Farid Bukhári, a general of Akbar. In the second hemistich of the couplet quoted above the word

•ك is transcribed in the catalogue as •گر. But the word •گر gives no sense, so I read it as •ك which I think is a better reading.

² The Hyderabad edition of the *Diván* of Ḥasan contains 161 *Qaṣidas*.

³ Rukn u’d-Dín Qadr Khán was the youngest son of Sultan Jalál u’d-Dín Khaljī who occupied the throne of Delhi for a short period of five months after the murder of Jalál u’d-Dín in 695 A.H. = 1295 A.D. (Baranī, p. 238).

monarch is given equal rank with Alexander the Great in his campaigns, and is extolled as a champion of orthodoxy in his efforts to suppress heresy. But one of the greatest defects of these poems, if I am allowed to say so, is that they are devoid of any chronological data. The poet speaks of contemporary events, but never assigns any date to them. The only dates that we come across are the dates of the composition of two of his poems, one in praise of God and the other in praise of the Prophet, which are assigned to A.H. 703¹ (A.D. 1303), and A.H. 707² (A.D. 1307) respectively. These dates do not throw any light on the historical events of his time, but simply points to a period of his life when he was engaged in composing these *Qasidas*. To a student of history his *Qasidas* are entirely disappointing.

The style of his *Qasidas* is rather simple and unadorned. The words used are always clear and intelligible to the reader. Although he sometimes aspired to attain the fame of Kháqání as he hints in the following verses in one of the *Qasidas* addressed to Ulugh Khán,

روزگار شه و خان غیرت خاقان آمد

گفته بنده حسین غیرت خاقانی باد

‘The Kháqán is jealous of the fortune of the King and the Khán

May the poetry of Hasan excite jealousy of Kháqání,’

he has carefully avoided the use of obscure and ambiguous words for which Kháqání is notorious. He wrote one *Qasida* in reply to one of Kháqání’s poems known as

قصیده فی التزام العید فی کل بیت

(*Qasida* in which the use of the word ‘*Id* has been made in every couplet). The head line of this poem runs:—

فی موسم العید باسم سلطان الاعظم فی مجابات سلطان الشعرا

افضل الدين الخاقانی زید فیضه

‘On the occasion of ‘*Id*, dedicated to the great King, in answer to the King of poets Afzal u’d-Dín-al-Kháqání (may his excellence increase).’

¹ D.H., I.O.L., 1223 f. 3a.

² *Ibid.*, f. 4b.

³ D.H., Add. 24, 952, f. 28a.

⁴ K.K., pp. 325–29.

⁵ D.H., Bodl. (Ouseley 122), f. 57.

The poem opens with the verses:—

ساقیا می ده که مهر می کده بکشاد عید
کرد جانها را بجام شادی افزا شاد عید

‘O, Sáqí, give wine because the ‘fíd has opened the seal
of the tavern,
The festival has made the souls happy with the joy-
increasing cup.’

Wherein *Hasan* differs from other *Panegyrists*.—*Hasan* differs from most of the other Persian panegyrists in that he never employs mean and despicable methods to extort money, or has recourse to satire when panegyric fails. He was always satisfied with his lot and would give thanks to his patron for whatever reward he had received. Submission to the will of God was the main principle of his life as he declares in one of his *Qaṣidas*:—

در روزی چون آسمان دارد بر در عمر و زید چون گذرم¹
چه شکایت کنم ز دور فلک هر چه هست از قضا و از قدرم

‘When the door of my sustenance is in heaven,
Why should I go to the door of ‘Amr and Zayd.
What complaint shall I make against the revolution of
the sky,
Whatever befalls me is from Divine decree and will.’

The general trend of his poems shows that the art of *Qaṣida* writing did not appeal to his genius. It is probably due to this reason, more than to anything else, that the number of his *Qaṣidas*, in spite of his long service at the court of several Kings, is so small in comparison with the number of his lyrical poems. His dislike for this type of poem is also to a certain extent due to the influence of his spiritual guide who used to detest panegyrics and considered the use of high-sounding laudatory terms as an abuse of poetic genius.²

Ghazals.—There are nearly eight hundred *Ghazals* written by *Hasan*, each consisting of not less than five and not more than twelve couplets.³ The reputation of the poet rests mainly on these poems and he is considered as one of the earliest masters of this form of poetry.

Development of Ghazal before Hasan.—The *Ghazal* or the love poems of Persia may be said to be an offshoot of the *Qaṣida*

¹ D.H., I.O.L., f. 6a.

² F.F., Or. 1806, f. 126a.

³ The Hyderabad edition of the *Diván* contains 809 *Ghazals*.

or panegyrics, which form the beginning of Persian poetry. The main differences between these two forms of verse are in the subject-matter and in the length of the poem. The subject of a *Ghazal* is generally erotic and mystical, and seldom exceeds a dozen couplets, whereas a *Qasida* may be a panegyric, or a satire, or it may be didactic, philosophical or religious, often extending to more than a hundred couplets. A *Qasida* generally begins with the description of a beautiful object or of the poet's beloved, which is technically called *Tashbīb* or Exordium, and then the poet introduces his *Mamdūh* (the object of praise) and enters into the *Madiha* or panegyric proper. The *Tashbīb* is the basic principle of a *Ghazal*. This element of the beautiful has been transferred to *Ghazal* and it became the chief feature of this form of poetry. In a *Qasida* the poet praises the liberality, the pomp, the power, and the justice of his patron, whereas in a *Ghazal* he describes the beauty, the coquetry, the oppression, and the tyranny of his beloved. In the early stage of its development there was no appreciable improvement; it lacked that enthusiasm and emotion which we find in the works of the later poets. For a long time in Persia the composition of *Qasidas* was considered to be the best accomplishment of a poet, and it was the only means of gaining favour and honour at the royal courts. Consequently, the poets had to devote all their attentions and energies to the composition of this form of poetry, and the writing of *Ghazal* was neglected.

It is with the growth of Śūfism that a distinct improvement was made in the composition of *Ghazal*. The element of love, being one of the fundamental principles of this system of mystic philosophy, had found its best vehicle of expression in the medium of lyric poetry. The *Diván-i-Shams-i-Tabríz*¹ of Mawláná Jalál u'd-Din-Rúmi is one of the best examples of mystic lyrics that has ever been written in Persian. Hakím Saná'í, Awḥadī-Marághí, Farid u'd-Din 'Attár, and 'Iráqí, had also made their contribution towards the development of mystic poetry. But the *Ghazals* written by them were smaller than their other forms of poetry, and the love that they extolled was divine rather than human.

The Mongol invasion of Persia with the destruction of the Caliphate, which is considered as the great turning point in the history of Islamic civilization, brought about a great change in the sphere of Persian literature and culture. From this time we find a different trend of thought in Persian poetry. The enthusiasm which the poets displayed in the composition of *Qasidas* celebrating the power and conquests of Persian monarchs has received a great setback and we do not find eminent *Qasida* writers in the post-Mongol period worthy of being compared

¹ An excellent selection of this *Diván* has been published with a translation by Prof. Nicholson of Cambridge.

to those of pre-Mongol days. The poetry produced during this period generally contained a certain mournful and melancholy strain, as if something of vital importance had been missing from the soul of the nation, which it always yearns to regain. The expression of this mental agony revealed itself in lyrical poetry, and produced some of the greatest masters of poetic art, of whom Persia has ever been able to boast. The *Ghazal* has received the greatest attention from the Persian singers and a remarkable development has since been made.

Sa'dí is the fore-runner of this movement. After him come Ḥasan, Khusraw, Salmán, Khvájú and Ḥáfiz, in whom the Persian *Ghazal* has reached its highest perfection. Each of these poets had been greatly influenced by Sa'dí and they recognized him as a great master of lyrical poetry, and Ḥáfiz has said:—

استاد غزل سعدی ست پیش همه کس اما¹
دارد سخن حافظ طرز و روش خواجو

‘Before all persons Sa'dí is the master of *Ghazal* but,
The poetry of Ḥáfiz has the style and manner of
Khvájú.’

Influence of Sa'dí on Ḥasan.—The *Ghazals* of Ḥasan were greatly influenced by the works of Sa'dí in their style and thought. It is due to this similarity of ideas and diction in these two poets that Ḥasan was called by his contemporaries the Sa'dí of Hindustán.²

Sometimes we come across parallel passages conveying an idea common to both but expressed in different forms. I quote here a few of these verses:—

Sa'dí—

بدم گفתי و خرسندم عفاک الله نگو گفתי³
سگم خواندی و خشنودم جزاک الله کرم کردی

‘Thou didst speak me ill and I am content: God pardon thee, thou didst speak well!
Thou didst call me a dog, and I acquiesced: God reward thee thou didst confer on me a favour!’

¹ S.N., Vol. V, p. 38.

² Baranî, p. 360. In one sense Ḥasan may be said to be a contemporary of Sa'dí, as the latter lived up to A.H. 691 = 1291, when Ḥasan was forty years old.

³ *Tayyibât*, Bib. Ind., p. 469. The first verse of this couplet is also used by Ḥáfiz as a *Tazmín* in one of his poems (*vide* D.H.B., Ode No. 8).

Hasan—

گر سگی کوی خودم خواند شبی¹
والله آن شب روز بازار منست

‘If for a night she calls me a dog of her lane
By God that night would be my brisk market.’

Sa‘dí—

دوستان عیب کنندم که چرا دل بتو دادم²
باید اول بتو گفتن که چنین خوب چراى

‘My friends blame me for yielding my heart to thee,
Thou shouldst be questioned first “Why art thou so
lovely?”’

Hasan—

گفتی که حسن دلت چه ارزد³
از غمزه بهرس من چه دانم

‘Thou hast asked, “Hasan! what is the value of thy
heart?”
What do I know, ask thy amorous glance.’

Influence of Jalál u‘d-Dín Rúmí.—In the mystical odes of Hasan we find some influence of the works of Jalál u‘d-Dín Rúmí. The poet has not made any direct acknowledgment of his indebtedness to this great Persian mystic, but from a careful search we find some of the ideas of Rúmí to have been expressed by Hasan in a different form. I give here the following parallel passages:—

Rúmí—

سینه خواهم شرحه شرحه از فراق⁴
تا بگویم شرح درد اشتیاق

‘I want a heart torn to pieces by separation
So that I may unfold (to it) the pain of love-desire.’

¹ D.H., I.O.L., f. 996.

² *Tayyibát*, Bib. Ind., p. 464. Most texts give منع instead of عیب
in verse I of this couplet.

³ D.H., I.O.L., f. 14.

⁴ *Magnaví*, G.M.S., Bk. I, p. 3.

Hasan—

هر دل که چون چراغ نمی سوزد از فراق¹
او را چه روشن ست که سوز فراق چیست

‘The heart that is not burning like a lamp by separation
How can it understand the burning (pangs) of severance’

Rúmi—

اگر تو عاشقِ عشق و عشق را جويا
بگیر خنجر تیز و ببر گلوی حیا

‘If thou art Love’s lover and seekest love
Take a keen poniard and cut the throat of bashfulness.’

Hasan—

بتیغ عشق شو کشته حسن وار²
اگر خواهی بقای جاودانی

‘Get thyself killed like Ḥasan, with the sword of Love
If thou desirest eternal permanence.’

Rúmi—

گفت لیلی را خلیفه کآن توی³ کز تو مجنون شد پریشان و غوی
از دگر خوبان تو افزون نیستی گفت خامش چون تو مجنون نیستی

‘The Caliph said to Laylá: “Art thou she
By whom Majnún was distracted and led astray?
Thou art not superior to other fair ones.”
“Be silent” she replied “Since thou art not Majnún”.’

Hasan—

مدعی گفت بلیلی بطن (؟) رو که چنان چابک و موزون نه
لیلی ازین حرف بمخندید و گفت با تو چه گویم که تو مجنون نه

¹ D.H., I.O.L., f. 90a.

² *Diván-i-Shamsi-Tabriz*, Ed. Nicholson, p. 2.

³ D.H., I.O.L., f. 217b.

⁴ *Magnaví*, G.M.S., Text, Book I, p. 26 and Nicholson’s translation, p. 25.

⁵ D.H., I.O.L., f. 208b.

'A boaster said to Laylá in reproach
 "Go, thou art not so nimble and graceful"
 Laylá laughed at this and said
 "What shall I tell thee, since thou art not Majnún".'

Influence of Ḥasan on his successors.—Among the successors of Ḥasan in the field of Persian poetry, we find two who are imitators of his style. One is Kamál of Khujand¹ and the other Zamírí of Ispahán. The former is accused by some critics as a plagiarist of Ḥasan. Jámí says: 'Kamál imitates Ḥasan Dihlaví, but his poems contain more of mystical ideas than those of Ḥasan. On account of this imitation, he was called a plagiarist of Ḥasan.'² The charge of plagiarism made against him by his critics is rather too severe. A comparison of his *Diván*³ with that of Ḥasan does not reveal any serious evidence to substantiate it. The style and language of Kamál shows clearly the influence of Ḥasan, but the two poets differ a great deal in their thoughts and ideas. Kamál is more of a mystic than Ḥasan. Zamírí,⁴ whose full name is Kamál u'd-Dín Ḥusayn, flourished in the court of Sháh Tahmásp (reigned A.H. 930-984 = 1524-76) the Šafaví King. He has composed a *Divan* consisting of Ghazals in imitation of Ḥasan under the title of Ḥasan

Ma'al (حسن مآل). The author of the *Makhzan u'l-Ghard'ib* and the *Ātish-Kadah* speak very highly of his abilities as a poet of original and imitative composition. He is also said to have been highly proficient in the art of necromancy.

Influence of Ḥasan on Ḥáfiz.—In the poetry of Ḥáfiz also we find some influence of Ḥasan; but Ḥáfiz has made no direct acknowledgment of any indebtedness to Ḥasan. On the other hand, he says that his poetry bears resemblance to the style and diction of Khvájú of Kirmán. The only reference that he

¹ His full name is Kamál u'd-Dín b. Mas'úd. He was a great saint and a mystic poet of the latter part of the eighth century of the Híjra. The Jalá'irí Sultan Ḥusayn bin Uways (776-784 = 1374-82) showed him much favour and built for him a monastery. He is said to have died in A.H. 803 = A.D. 1400-1. (Vide J.N.U., pp. 712-13, L.H.P., Vol. III, pp. 320-30.)

² *Baháristán*, p. 100.

³ Add. 19,496.

⁴ This poet was a prolific writer. He is the author of six *Magnavis*, viz. *Názva-Niyáz*, *Ḥasnat u'l-Akhbár*, *Vámiq-va-'Azrá*, *Laylá-Majnún*, *Bahár-va-Khazán* and *Iskandar-Námah*, and of seven *Diváns* of Ghazals, viz. '*Ishq-i-Bizavál*, *Kanz u'l-Aqwál*, *Šurat-i-Hál-i-Safina-i-Iqbál*, *Šaiqal-i-Malál*, '*Uzr-i-Maqal*, *Quds-i-Khiyál*; four other *Diváns* in imitation of Sa'di's *Tayyibát*, *Badá'i*, *Khvátim*, and *Ghazliyat*, viz. *Badá'u-u's-Shi'r*, *Saná-i-Táhirát*, *Niháyat-u's-Sihr*; and another *Diván* called '*Ayun u'l-Zulál*; and of thirteen similar *Diváns* in imitation of those of Bába Fighání, Jámí, Lisání, Sháhi of Sabzvár, Baná-i of Herát, Bába Sháhídi of Qum, Amír Humáyun, Mírza Sharaf Jahán of Qazvín, Kamál Khujandí, Amír Khusraw and Amír Ḥasan. (Vide M.G., Or. 4610, f. 259.)

makes of Indo-Persian poets is to be found in the following verses sent to Sultan Ghiyás ud-Dín of Bengal:—

شكر شكن شوند همه طوطيان هند¹
زين قند پارسی كه به بنگاله ميروند

‘All the parrots of India become sugar-breakers
Through this Persian candy which is going to Bengal.’

The word *Tut-i-Hind* or the parrot of India may be applied only to two of the Indo-Persian poets—Hasan and his contemporary Khusraw. Jámí has referred to them in the same way in the following verses²:—

آن دو طوطی كه بنوخیزی شان بود در هند شكر ریزی شان
عاقبت سخره افلاك شدند خامشان قفس خاک شدند

‘Those two parrots with tender growth,
Who filled Hindustán with sugar,
Became at last a mark for the arrow of the sky,
And were silenced and imprisoned in the cage of earth.’

Hasan also styles himself a parrot of eloquence in one of his odes in the following verses³:—

مرا كه طوطی باغ بلاغت است لقب
شدم ز مائدة شكر شاه شكر چین

‘I, who possess the title of “the parrot of the garden of eloquence”
Have become a pecker of sugar at the table of gratitude of the King.’

In another place he says⁴:—

كنون مبارک بادت هوایی هندوستان
كه طوطيان را آموختی شكر خوردن (۴)

‘Now may the atmosphere of India be auspicious to thee,
As thou hast taught the parrots to peck sugar.’

¹ D.H.B., No. 158.

² Badáúní, Vol. I, p. 201.

³ D.H., I.O.L., f. 42b.

⁴ D.H., I.O.L., f. 202.

The reference of *Háfiz* to the parrots of India indubitably shows that he was familiar with the works of these great Indo-Persian poets and particularly with the *Ghazals* of Hasan, which exerted a certain influence on his poetry. I quote below some of the parallel passages which are to be found in their *Diváns*:—

I. *Hasan* ¹—

رخ تو آفت شهر آمد و آشوب سپاه
قصه ما و تو شهری و سپاهی دانست

‘Thy face became the calamity of the city and torment
of the army
Our story became known to the citizen and the soldier.’

Háfiz ²—

فغان کین لولیان شوخ شیرین کار شهر آشوب
چنان بردند صبر از دل که ترکان خوان یغا را

‘Alas! these saucy dainty ones, sweet of work, the torment
of the city,
Take patience from the heart just as the men of
Turkistán take the tray of plunder.’

II. *Hasan*—

بیا ساقی هنوز آهستگی چیست ³
که اینک گل بخندید ابر بگرس

‘Come Sáqí, what is this hesitation?
Because the rose smiled and the cloud wept.’

Háfiz—

خوشت ز عیش و صحبت باغ و بهار چیست ⁴
ساقی بکاست گو سبب انتظار چیست

‘What is there more pleasant than the enjoyment of the
garden and the spring,
Where is the Sáqí? say what’s the cause of waiting?’

¹ *Ibid.*, f. 79b.

² D.H.B., No. 8.

³ D.H., I.O.L., f. 89.

⁴ D.H.B., No. 55.

III. *Hasan*—

اگر ساقی تو خواهی بود ما را¹
 که می گوید که می خوردن حرام است

'If thou becomest our Sáqí,
 Who says that drinking is unlawful?'

Háfiz—

در مذهب ما باده حلال است و لیکن²
 بی روی تو ای سرو گل اندام حرام است

'Wine is lawful in our creed but
 Without thy face, O rose bodied cypress, it is unlawful.'

IV. *Hasan*—

روی که تراست مه ندارد نقصان بتو هیچ ره ندارد³
 این کوکبه که هم تو داری خورشید نداشت مه ندارد

'The moon hath not a face like thee,
 To thee there is no decline;
 The splendour which thou hast
 Neither the sun nor the moon doth possess.'

Háfiz—

روشنی طلعت تو ماه ندارد پیش تو گل رونق گیاه ندارد⁴
 گوشه ابروی تست منزل جانم خوشتر ازین گوشه پادشاه ندارد

'The moon hath not the brightness of thy face,
 In thy presence the rose hath not (even) the splendour
 of the grass,
 The corner of thy eyebrow is the dwelling of my soul,
 The King hath not a happier corner than this.'

¹ D.H., I.O.L., f. 98a.

² D.H.B., No. 34.

³ D.H. Add. 24952, f. 113.

⁴ D.H.B., No. 171.

V. *Hasan*—

¹ چه رویست آن که گوی نو بهار ست
 غلط کردم بهشت روزگار ست
 بنقد امروز با او در بهستم
 مرا با نسیه فردا چه کار ست

'What is that face? thou wouldst say that it is the new
 spring,
 I am wrong, it is the paradise of the world.
 To-day in cash I am in paradise with her.
 What use have I for the credit of the morrow.'

Háfiz—

² کنون که می دمد از بوستان نسیم بهشت
 من و شراب فرح بخش و یار حور سرشت

 چمن حکایت اردی بهشت می گوید
 نه عارفست که نسیه خرید و نقد بهست

'Now that the breeze of paradise bloweth from the rose
 garden
 I and the joygiving wine and the Houri natured beloved
 (are together)
 The sword uttereth the tale of the month of spring
 No gnostic is he who purchased a loan and let go the
 cash.'

Ghazals of Hasan quoted in different Anthologies.—Besides the poetical extracts quoted by the biographers, we find that his *Ghazals* have been profusely quoted in a number of anthologies. A list of those, available in the libraries of Great Britain, is given below:

- (1) An anthology of mixed contents (A.H. 813) prepared for Jalál u'd-Dín Iskandar B.'Umar-Shaykh, a grandson of Timúr who ruled over Fars as a vassal of his uncle Sháh Rukh. Add. 27,261.

¹ D.H., I.O.L., f. 83.

² D.H.B., No. 60.

- (2) Anthology (10th century A.H.) belonging to a Turkish noble named Khálid Beg. Add. 7,824.
- (3) Anonymous anthology (10th century A.H.), Or. 1228.
- (4) Anonymous anthology (1200 A.H.). Add. 19,494.
- (5) Anonymous anthology (10th century A.H.). Add. 7,796.
- (6) Anthology (A.H. 1153) prepared by Mírza 'Abdu'l Qádir Bídil. Add. 16,803.

Besides these there are four other undated anthologies in the Berlin Library of Persian MSS. (Nos. 58, 83, 681, 685), which cite a number of his poems.

The poems cited in these anthologies correspond to the *Ghazals* contained in the Bodleian, the British Museum and the India Office copies of his *Diván*. These anthologies except that of Mírzá Bídil, do not add to our knowledge of his poems. Mírzá Bídil ascribes one *Mukhammas* or Fivesome poem to Ḥasan.¹ But it seems that this poem has been wrongly attributed to him. According to the rules of Persian prosody very often the basis of this type of poem is a *Ghazal* of some other poet, to each couplet of which three more '*miṣrā's*' or half verses are added to make a *Mukhammas*. Now this poem of doubtful authenticity is based on a *Ghazal* of Ḥáfiz which opens with the verse:

² تاب بنفشه میدهد طرّه مشکسای تو
 پرده غنچه میدرد ³ عارض دلکشای تو

Ḥasan being a predecessor of Ḥáfiz could not possibly have utilized his *Ghazal* as a basis of this *Mukhammas*. So Mírzá Bídil is fundamentally wrong in ascribing this poem to Ḥasan. It must have been written by some other person who was either a contemporary or successor of Ḥáfiz.

Style of his Ghazals.—The special features of Ḥasan's style consist in its simplicity and a natural flow of language, combined with sweet and harmonious rhythm. The metres employed are invariably short and attractive to the ear. The words he uses are generally concise and plain and belong to the every-day ordinary vocabulary of the people. The entire absence of obscure metaphors and far-fetched images has made his poems very popular among his contemporaries. Both contemporary and later-day critics are unanimous in praise of the beauty of his style and diction. I quote here the opinion of two of the critics of two different periods. One is Ziyá Baraní, who says

¹ *Bayáz*, Add. 16,803, ff. 375-76.

² D.H.B. No. 472.

³ Some texts read as خنده

'He was an accomplished master in the simplicity of style and flow of diction, and as he has composed many a mystic ode in a flowing style, he is called the *Sa'di* of Hindustán.'¹ The other is *Jámí*, a great mystic poet and a biographer of the fifteenth century A.D., who speaks of Hasan's style in the following words:² 'His *Ghazals* have some distinctive features; he was very particular in the choice of metres and rhymes, which are the peculiar beauty of his poetry. This careful selection gives his poems a special colouring, so much indeed that they appear to be very simple, while actually they require much art and labour to compose. Therefore people have called his poetry easy but difficult to compose.'

Are the Ghazals to be interpreted in Súfistic sense?—It may be asked whether the odes of Hasan are to be taken in a literal or Súfistic sense. This question does not admit of a general answer. There are a number of odes which may be interpreted in a figurative or allegorical sense, and there are others which may be better understood and appreciated in a literal sense. The number of the latter class is considerably larger than the former. The poet, however, desires us to take the inner meaning of his verses and interpret his love as '*Ishq-i-Haqiqi* or love divine. He says:

طریق سهل مہندار عشق بازی ما³
حقیقت ست غم عاشق مجازی نیست

'Think not the way of our love's sport to be easy
The pangs of love are divine, not profane.'

ای حسن ما ز اهل تحقیقیم گرچه ظاهر ز اهل تحقیریم⁴

'O Hasan! We belong to the people of Truth
Although outwardly we are of the despised.'

There are poems, which reveal the poet's leaning towards the Súfistic doctrine of *Faná-Filláh* or the passing of the unreal into the real self in order that it may be re-united with the one infinite Being; these poems, of course, answer directly to the above claim made by the poet. But the erotic ideas which permeate most of his odes, outweigh the element of sufism displayed in others, and a comprehensive survey shows him as an erotic rather than a Súfí poet. It is, however, not to be supposed that the erotic poems of Hasan give expression to the cult of a

¹ Barani, p. 360.

² *Baháristán*, p. 101.

³ D.H., I.O.L., f. 104.

⁴ *Ibid.*, f. 141.

reckless libertine for the gratification of sensual pleasure. They contain high and noble sentiments expressed with appropriate dignity of manner. The poet holds an ideal of beauty before his mental vision and tries to draw a picture of that ideal with the aid of his lively fancy and powerful imagination. The beauty of nature appeals to him most. He holds it up to great admiration and thereby admires the Creator, who is himself the supreme of Beauty.

The Popularity of his Ghazals.—The *Ghazals* of Hasan gained great popularity, not only among his contemporaries, but also among the poets of the succeeding generations. His achievement of considerable celebrity during his lifetime has been referred to by the poet himself in the following verses:

از نظم حسن، دیدم شهری شده دیوانه¹
 زیرا که نمی بینند این طرز بدیوانه

‘I find the city mad with Hasan’s verse,
 For they find not such elegance in other *Diváns*.’

Besides the testimony of his contemporary scholars (to which I have already referred), we have other evidence from the writings of Persian poets and biographers which points clearly to the popularity of his poems even beyond the land of his birth. The popularity of his works may be best judged from a consideration of the opinions of the Persian critics and of the reception they obtained in Persia, a land where Indo-Persian poetry is seldom appreciated, unless it is of a very high order. Dawlat-Sháh in his *Memoirs of Persian poets* says,² ‘The *Diván* of Khvāja Hasan is very highly admired in these days; and the men of learning and discernment attach an unlimited esteem to his poetry. As his poems are very well known to the high and the low, I am not going to quote here more than one of his *Ghazals*.’ Taqí Káshí, another biographer of the tenth century of the Hijra, says,³ ‘His *Diván* is highly honoured and respected, and the men of understanding and good taste place great confidence in his poems. His verses enjoy a great reputation among the people.’ We find such evidence of the popularity of his poems in Persia even during the reign of Sháh Tahmásp (A.D. 930–34) the Šafaví King; and during the reign of this monarch, Zamírí, the court poet of the time, wrote a *Diván* in imitation of Hasan.

Among the Indo-Persian scholars of the later period his *Ghazals* enjoyed a very great amount of popularity, and they

¹ D.H., Add. 24,952, f. 38b.

² T.S.D., p. 248.

³ K.A.Z.A., I.O.L., No. 667, f. 541a.

were placed on the same level as those of other great masters of the Persian lyric, Sa'dí, Khusraw and Háfiz. He was regarded as a past master of Persian songs and many a poet would have considered himself fortunate if he could have secured the blessing of his approbation. An instance of such a desire is found in one of the poems of Shaykh Násir u'd-Dín-Gharíb¹ of Delhi:

سرود عیش ز گفتار من کند مطرب²
 ره سماع ز اشعار من زند قوال
 اگر بفارس رود کاروان اشعارم
 روان سعدی و حافظ کنند استقبال
 و گربه هند رسد خسرو و حسن گویند
 که ای غریب جهان مرجبا تعال تعال

'The minstrel would play the tune of joy with my lay,
 The mystic-singer would dance in ecstasy with my
 verse;
 If the Caravan of my poetry were to travel to Persia
 The souls of Sa'dí and Háfiz would greet it.
 If it reached Hindustán, Khusraw and Hasan would
 say
 O, Gharíb of the World, Hail to thee! Come, come.'

Character of his Ghazals.—Hasan's *Ghazals* have a certain distinctive feature of their own. His poems are generally pervaded by an emotional frenzy and a burning enthusiasm which are not to be found to the same extent in the writings of his predecessor Sa'dí and his contemporary Khusraw. In the poems of Sa'dí and Khusraw, no doubt, there is an element of high emotion, but when we consider their work as a whole, this element appears very small among the tame and gentle expressions which preponderate in the majority of their poems. Hasan, as a lyric poet, excels them both by his greater enthusiasm and his deeper inspiration manifested in vigorous and impressive language. Another distinctive characteristic of his *Ghazal* is the presence of a single idea running through the whole poem. As a general rule every couplet in a *Ghazal* expresses a complete idea, independent of what has gone before or what comes after;

¹ Gharíb was the poetical name of Shaykh Násir u'd-Dín. He was a native of Khurásán, migrated to India during the reign of Humáyun. He is the author of a *Diván* in Persian. (*Vide Riyáz-u's-Shu'ará*, Add. 16,729, f. 318b; and Beale, p. 140.)

² Anonymous anthology, Add. 7796, f. 47.

but Ḥasan has often deviated from this convention and we find some of his poems with a single idea running throughout.¹

III. HIS MINOR POEMS.

Qit'a or fragments.—The *Qit'a* or Fragmentary poems of Ḥasan consists of twenty pieces. One of these is addressed to 'Alá'u'd-Dín Kháljī, and two other poems to Ulugh Khán. Of the rest, some describe the beauties and pleasure of spring, and some are devoted to moral topics and satire of the selfish devotees.

Rubá'í.—The *Rubá'í's* or quatrains written by Ḥasan are much fewer than his *Ghazals*. The earliest available manuscript² of his *Diván* contains 137 poems of this type and the contents of the later copies vary but none exceeds this number.

Of these poems, twenty-five are addressed to Sultan 'Alá'u'd-Dín, five to prince Khizr Khán, and the rest are devoted to prayer and love. The general trend of his love-quatrains, with a few exceptions is erotic rather than mystical.

Magnaví.—The *Magnaví* poems of Ḥasan are devoted to three distinct types of subjects—eulogistic, moral and romantic. All these poems, except the single romantic one, are short and disconnected pieces, written on different occasions, probably in his leisure hours which he wanted to employ in composition on lighter themes. These small poems do not reveal that amount of burning pathos and frenzy of feeling which we see in his *Ghazals* and the romantic *Magnaví*. They are purely descriptive and didactic.

The eulogistic *Magnaví* poems are devoted to the following topics:—

- (1) A general description of the power and might of Sultan 'Alá'u'd-Dín.
- (2) In commemoration of the suppression of a mutiny in A.H. 700.
- (3) Advent of the spring.
- (4) In praise of the Imperial sword.
- (5) On the birth of a prince.
- (6) On the occasion of proclaiming Khizr Khán as an heir-apparent.
- (7) The marriage of the prince.
- (8) In praise of Ulugh Khán.
- (9) In praise of Shaykh Nizám u'd-Dín Awliyá.
- (10) Three other poems in praise of his learned companions.

¹ Khusraw has also written a number of such poems, which have been cited by Shiblī. (*Vide* S.N., Vol. II, pp. 162-67.) For want of space none of these *Ghazals* could be included here.

² Bodl. MS. (Ouseley) 122.

Of the *Maṣnavi* poems on moral topics, the extant manuscript contains only seven. These poems are written after the model of Sa'di's *Bustān* in which the poet tells certain stories or relates some sayings of a great man and then moralizes on them according to his own light and judgment. Although the number of these poems is very small, they provide interesting reading and throw some light on the ascetic temperament of the poet.

The Romantic Maṣnavi.—The romantic *Maṣnavi* of Hasan, known as the '*Ishq-Námah*, or the *Hikáyat-i-'Ashiq-i-Nágúrí* (Book of love or the story of the lover of Nágúr¹), is a short love-poem consisting of six hundred and six couplets. The whole book, as the poet himself says, was composed during a single night on Monday, the first of *Zú'l-Hijjah*, A.H. 700 (A.D. 1301).² The metre used here is the apocopated hexametre *Hajaz* (∇ . . . / ∇ . . . / ∇ . . .).

The poem is modelled on the romance of Laylá and Majnún of Nizámí of Ganja, which is one of the most popular love-stories in the East, and particularly in India. Khusráw, the contemporary of our poet, had also written on the same theme of romance, and he had composed five *Maṣnavis* of this type, collectively known as *Panj-Ganj* (Five Treasures), dealing with the same legends as those of Nizámí. But our poet did not follow his predecessors blindly. There is no doubt that he is indebted to Nizámí for the main idea of his poem, but he has selected a theme of his own. The old Persian legends, which had been worn threadbare by other writers, did not afford sufficient scope for his imagination. He wanted to discover a new field for his poetic interpretation, and he found it in the Hindu tales. So he selected one of the love stories of his homeland and struck out a new departure. The episode, he says, is not an invention of his imagination but a story well known in the country.³

نه از خود کردم این افسانه منظوم

که مشهور است این قصه دران بوم

'This story was not weaved out of my own fancy,
It is a story well known in that country.'

¹ Nágúr is the name of an old city of Eastern Rájputana, which now forms a part of Jodhpur State. (*Vide* Imperial Gazetteer of India, Vol. XVIII.)

² D.H., Bodl. (Ouseley, No. 122), f. 282

بکرم اندرین چند تفکر سواد یکشبه بود این همه در

بسال هفصد این در شد نموده دوشنبه غره ذوالحجه بوده

³ D.H., Bodl., f. 282.

This was rather a bold step on his part to depict the ideal nature of love from the life-story of a young Hindu couple, which was not likely to be well received by the orthodox opinion of the time. The poet anticipated this danger before he began the book, so he replies to this possible charge of heresy in the concluding verses of his poem in the following way¹:—

اشعار عاشق کاریست جانی ز کفر و دین برون است این معانی

‘The verse of love is a theme of the soul
It soars beyond faith and infidelity.’

IV. HIS PROSE WORKS.

The prose works of Ḥasan that have survived to us are the *Favá'id u'l-Fu'ád*, and a short *Marsiya* written on the death of Khán-i-Shahíd, the eldest son of Sultan Balban. Another work entitled *Siyar u'l-Awliyá*, or Lives of Saints, is said to have been written by him, but this book seems to have been lost.

Favá'id u'l-Fu'ád.—The *Favá'id u'l-Fu'ád* is a collection of discourses of his spiritual guide Shaykh Nizám u'd-Dín Awliyá, made in a number of meetings from the year A.H. 707 to 722² (A.D. 1308–1322). The custom of the Shaykh was to hold occasional assemblies of his disciples at which he used to discourse on various topics connected with religion, mysticism, and other matters relating to the life of devotees. Most of these discourses are illustrated by anecdotes, largely drawn from his personal experience and reminiscence. These discourses were carefully noted down by Ḥasan and finally published under the above title, with the approval of the Shaykh. At the completion of each chapter the author used to show it to his spiritual guide for his opinion, and we find that on each occasion he received high approbation for his faithful and systematic reproduction of all the sayings of the Shaykh.

In the opening chapter of the book the author gives the following account of the method of his collection and the reason why he called it *Favá'id u'l-Fu'ád*³:—

‘These heavenly gems and indubitable ornaments have been collected from the treasure-house of instruction and the secret chamber of infallibility of the Master of rectitude, entitled “The mercy of the universe, the King of the poor and the helpless, Nizám u'l-Haqq-al Shar'al-Hudá-al-Dín” (May the mercy of God be upon him). Whatever has reached my ears either in the actual form or in its general significance from that lamp of divine assemblage, I have written down according to my simple

¹ D.H., Bodl. (Ouseley) 122, f. 282.

² The Encyclopædia of Islam is wrong in stating that these discourses were made from A.H. 717 to 722.

³ F.F., Or. 1805, f. 2.

understanding; and as the minds of afflicted persons would derive benefit from this compendium, so I have named it *Favá'id u'l-Fu'ád* (The benefits of the soul).'

The main divisions of the book.—The book is divided into two separate parts. The first part consists of four chapters containing the discourses made during a period of twelve lunar years from the third of *Sha'bán* A.H. 707 to the twenty-third of *Rajab* A.H. 719¹ = A.D. 1307–1319. It was completed, as stated at the end of this part, on Tuesday the second of *Sharwál* A.H. 719² = A.D. 1319. Each of these four chapters is devoted to a fixed period of time: the first chapter contains the discourses made during A.H. 707–709 (A.D. 1307–1309) and consists of thirty-four discourses; the second from A.H. 709 to 712 (A.D. 1309–1312) and consists of thirty-seven discourses; the third from A.H. 712 to 714 (A.D. 1312–1314) and consists of seventeen discourses; the fourth from A.H. 714 to 719 (A.D. 1314–1319) consisting of sixty-seven discourses. The second part contains thirty-two discourses delivered during a period of three years from the twenty-first of *Sha'bán* A.H. 719 (A.D. 1319) to the nineteenth of *Sha'bán* A.H. 722 (A.D. 1322). This part was completed on the twentieth day of the month of the later year, as the author says in the following verses³:—

چون بهتصد فرود بیست و دو سال
 بیستم روز از ماه شعبان
 از اشارت خواجه جمع آمد
 این بشارت ده فتوح جهان
 شیخ ما چون محمد آمد نام
 حسن اندر ثناء او حسان

'When twenty and two was added to seven hundred
 On the twentieth day of the month of *Sha'bán*,
 Was compiled at the command of the Khvāja
 This giver of happy tidings of the conquest of the
 world.

The fame of our Shaykh is like Muḥammad
 And Ḥasan in his eulogy like Hassán.⁴

¹ F.F., Or. 1806, f. 110. Rieu suggests this date to be the 5th of *Jamád II*, which is evidently wrong.

² *Ibid.*, f. 111.

³ F.F., Or. 1806, f. 132.

⁴ Hassán-ibn-Šabit was one of the Arabian poets who espoused the cause of the Prophet. The family to which he belonged had the greatest

In the concluding paragraph of the second part,¹ the author said that he would present us with another volume of the discourses that would be made after the year 722 A.H. The Shaykh lived up to A.H. 725 and Ḥasan survived him a few years more but we are not in possession of information as to whether anything was written by him during the last days of his life.

V. BIBLIOGRAPHICAL LIST OF AUTHORITIES AND ABBREVIATIONS.

- 'Abd u'l Ḥaq Dihlaví. Akhbár u'l-Akhyár. British Museum MS., Or. 221.
- 'Abdu'lláh Sihrindí. Ta'ríkh-i-Mubárák Sháhí. British Museum MS., Or. 1673.
- 'Abd u'r Raḥmán Chishtí. Mir'át-u'l-Asrár. British Museum MS., Or. 1756 = M.A.
- Aḥmad 'Alí Hāshimí. Makhzan u'l-Ghará'ib. British Museum MS., Or. 4610 = M.G.
- Afzal Sarkhvush. Kalimát-u'sh-Shu'ará. British Museum MS., Or. 470 = K.S.
- 'Alí Ibráhím Khán. Şuhuf-i-Ibráhím. B.M. MS., Add. 27,319.
- Amín Aḥmad Rází. Haft Iqlím. British Museum MS., Or. 203.
- Amír Ḥasan. Diván-i-Ḥasan = D.H.
Favá'id-u'l-Fu'ád. British Museum MSS., Or. 1806; Or. 2001 = F.F.
- Amír Khusraw. Kulliyát. British Museum MS., Add. 21,104 and I.O.L. No. 1186.
Ghurrat-u'l-Kamál. British Museum MS., Add. 23,549 = G.K.
I'jáz-i-Khusraví. Lucknow 1876 = I.K.
Ráhat-u'l-Muḥibbín. British Museum MS., Or. 1756 = R.M.
- Amír Khvurd. Siyar u'l-Awliyá. British Museum MS., Or. 1746 = S. Aw.
- Arabic History of Gujarát. Ed. Sir E. D. Ross, London, 1910-28 = A.H.G.
- Badá'uní, 'Abdu'l-Qádir. Muntakhab u't-Tavárikh, text. Bibliotheca Indica series of the Asiatic Society of Bengal, Calcutta, 1868.
Translation of Vol. I by Lt.-Colonel S. A. Ranking in the same series. Calcutta, 1898.
- Bankipore Catalogue of Persian MSS., Vol. I, Calcutta, 1908 = C.P.E.
- Baqiya Naqiya of Amír Khusraw = B.N.
- Baraní, Ziyá u'd-Dín. Ta'ríkh-i-Firúz-Sháhí. Bibliotheca Indica series of the Asiatic Society of Bengal, Calcutta, 1862.
- Barthold, W. Turkestan down to Mongol invasion. Gibb Memorial series, London, 1928.
- Beale, T. W. Oriental Biographical Dictionary, London, 1894.
- Bland, Nathaniel. A Century of Persian Ghazal, London, 1851.
- Bodleian Library, Catalogue = Bodl.
- Browne, E. G. Literary History of Persia, Vols. I-IV, London, 1908-1924 = L.H.P.

skill in poetry, for it produced six persons, in succession, all of them poets. (*Vide* Ibn-i-Khallikán's Biographical Dictionary, ed. by De Slane, Vol. III, p. 347 and Vol. IV, p. 259.)

¹ F.F., Or. 1806, f. 132.

British Museum Manuscript = Br. MS.

Dághistání, 'Alí Qulí. Riyáz-u'sh-Shu'ará. British Museum MS., Add. 16,729 = R.S.

Dará-Shikúh. Safinat-u'l-Awliya. British Museum MS., Or. 224.

Darvish-Jamálí. Siyar-u'l-'Arifin. British Museum MS., Or. 215 = S.A.

Dawlat Sháh. Taz-Kirat-u'sh-Shu'ará. Ed. E. G. Browne, London, 1901 = D.T.S.

Elliot, Sir H. M. History of India, Vol. III, London, 1871 = Elliot.

Diván-i-Hasan = D.H.

Encyclopædia of Islam = Ency. Isl.

Encyclopædia Britannica = Ency. Br.

Epigraphia Indica, Vol. II, Calcutta, 1894.

Favá'id u'l-Fuád = F.F.

Firishá, Muḥammad Qásim. Gulshán-i-Ibráhímí, Bombay, 1832.

Glossary of the Tribes and Castes of the Panjab, Vol. I, Lahore, 1919.

Gore, Sir Ouseley. Biographical Notices of Persian Poets, London, 1846 = N.P.

Háfiz, Shams u'd-Dín. Diván-i-Háfiz. Ed. Brockhaus. Leipzig, 1863 = D.H.B.

Haig, Sir Wolseley. Cambridge History of India, Vol. III, Cambridge, 1928 = C.H.I.

Hamdu'lláh Mustawfí. Nuzhat u'l-Qulúb. G.M.S. Leyden, 1915.

Hasan Nizámí. Táji-u'l-Ma'ásir. British Museum MS., Add. 7624 = T.M.

Huges' Dictionary of Islam = H.D.J.

Husayn-Dust-Sanbhalí. Taz-Kira-i-Husayn. British Museum MS., Or. 229.

Ibn-Baṭṭa. Tuḥfat-u'n-Nuẓẓár-fi-Ghará-ib-il-Amṣár. (Travels.) Cairo, 1323 A.H. = 1905 A.D.

Travels of Ibn-Baṭṭa. Urdu edn. of Muḥammad Husayn. Lahore, 1898.

Ibn Khallikán. Wafayát u'l-A'yán (Biographical Dictionary). Tr. M. de Slane, 4 vols., Paris and London, 1842-71.

Imperial Gazetteer of India, Vol. XVIII, Oxford, 1908.

Jalál u'd-Dín Rúmi. Maḡnaví. Ed. R. A. Nicholson, Gibb Memorial series, London, 1925.

Diván-i-Shams-i-Tabriz. Ed. R. A. Nicholson. Cambridge, 1898.

Jámí, 'Abd-u'r-Raḥmán. Baháristán. Ed. Freiherrn, Vienna, 1846.

Nafahát-u'l-Uns. Ed. W. Nassau Lees, Calcutta, 1859 = J.N.U.

Journal of the Royal Asiatic Society, 1913, 1926, 1929 = J.R.A.S.

Khayru'l-Bayan = K.B.

Kháqání. Kulliyát-i-Kháqání, Lahore, 1878 = K.K.

Khulasat u'l-Afkár = K.A.

Khvánd Mir. Ḥabíb u's-Siyar, Bombay, 1857.

Luṭf 'Alí Āzar. Atish Kadah, British Museum MS., Or. 1268.

Luṭf-u'llah Ṭihrání. May Khánah, British Museum MS., Or. 3537 = My.K.

Maṭlubu't-Ṭálibin = M.T.L.

Minháji u'd-Dín b. Siráju'd-Dín. Ṭabaqát-i-Násirí, text. Bibliotheca Indica series of the Asiatic Society of Bengal, Calcutta, 1864.

Translation by Major H. G. Revery in the same series, Calcutta, 1880 = T.N.

Muḥammad 'Awfí. Lubáb u'l-Albáb. Ed. E. G. Browne, London, 1906.

Muḥammad Ḥabíb. Ḥazrat Amír Khusrav of Delhi, Bombay, 1927.

Sultán Maḥmúd of Ghaznín. Bombay, 1927.

- Muḥammad 'Abd u'l Ghani. History of Persian Language and Literature at the Mughal Court, Allahabad, 1929.
- Nizāmí 'Arūzī. Chahār Maqála. Ed. Mírza Muḥammad Qazvíní, Gibb Memorial series, London, 1910.
Translation by E. G. Browne in the same series, London, 1921 = C.M.
- Nizām u'd-Dīn Aḥmad. Tabaqát-i-Akbari. Bibliotheca Indica series, Asiatic Society of Bengal, text and translation, Calcutta, 1913.
- Pandit, Shankar Pandurang. The Introduction to Gaṇḍavaho, Pombay Sanskrit series, Poona, 1927.
- Percy Sykes. History of Persia, London, 1921.
- Rizá Qulí Khán. Majma'u'l-Fuṣahá, Tíhrán, 1878 = M.F.
- Ross, Sir E. D. (Ed.) Ta'rikh-i-Fakhr-u'd-Dīn Mubárah-Sháh, London, 1927 = T.F.M.
Index to the Arabic History of Gujarát, London, 1928.
- Ross and Elias. The Ta'rikh-i-Rashidí of Mírza Muḥammad Ḥaidar Dughlát, London, 1895.
- Sa'dí. Odes of Sa'dí. Ed. Sir Lucas King. Bibliotheca Indica series, Calcutta, 1919.
- Shaykh Azarí. Javáhir u'l-Asrár. British Museum MS., Add. 7607 = J.A.
- Shiblí No'mání. Shi'ru'l 'Ajam. 5 vols., Cawnpore, 1920-23 = S.N.
- Shír Khán B. 'Alí Amjad. Mir'at u'l-Khayál. B.M. MS., Or. 231 = M.K.
- Sultan Ḥusayn. Majális u'l-'ush-Sháq. British Museum MS., Or. 208 = M.Us.
- Tabaqát-i-Akbar Sháhí = T.A.S.
- Taqí Káshí. Khuláṣat u'l-Ash'ar-va-Zubdat u'l-Afkár. India Office Library MS., No. 667 = K.Ā.Z.A.
- Tavárikh-i-Saláṭín-i-Dekhlí. British Museum MS., Or. 161 = T.S.D.
- Thomas, Edward. The Chronicles of the Pathan Kings of Delhi, London, 1871.

Futūḥāt-i-Firūzshāhī.

By N. B. Roy.

(Communicated by Dr. Baini Prashad.)

Sultān Firūzshāh Tughluq (752-790 A.H., 1351-1388 A.D.), one of the most enlightened rulers of the Tughluq dynasty, is described by Khwājah Nizāmuddīn Aḥmad Bakshī in the *Tabaqāt-i-Akbarī* as:—

این بادشاه عدالت پناه ضوابطِ عدل و احسان و قواعدِ امن
و امان بسیار در میان خلق گذاشت¹

The earlier part of the history of his reign was dealt with in fair detail by Diyā-uddīn Barnī in his *Tārīkh-i-Firūzshāhī*,² but after the death of this author, as no competent historian could carry on the work, the Sultān himself composed a pamphlet containing 'the *res gestae* of his reign, or, as he designates them his "victories", and had these engraved on the walls of the *Kūshk-i-Shikār*, on the dome of the *Kūshk-i-Nuzūl* and the minaret of the stone mansion at Firūzābād.³ In another place of the same work (p. 20), however, 'Afif has remarked that the Sultān had caused to be inscribed the history on the lofty tower of the *Kūshk-i-Nuzūl* which was erected in front of the royal court. Nizāmuddīn Aḥmad,⁴ however, states that the history was inscribed on the eight sides of the dome of the Jāmi' Masjid.

Manuscripts of this historical work of Sultān Firūz, which served as one of the sources of Nizāmuddīn Aḥmad's *Tabaqāt* and Firishtah's History, are very rare. Sir Henry Elliot was unable to obtain any copy, but Professor Dowson was able to include an almost complete translation of it in Volume III of Elliot's *History* from a unique manuscript belonging to Mr. E. Thomas.⁵ Apparently this is the manuscript which is listed

¹ B. De's edition of the text in the *Bibliotheca Indica* Series, Vol. I, p. 238 (1927); see also the English translation of the work in the same series by the same author, Vol. I, p. 256 (1927).

² For details regarding this work, see Prashad, B., *Journ. Roy. Asiat. Soc. Bengal*, Vol. IV (Letters), p. 785 (1938).

³ Shams Sirāj 'Afif's *Tārīkh-i-Firūzshāhī*, *Bibliotheca Indica*, edited by Vilāyat Husain, p. 177 (1888-91).

⁴ *Op. cit.*, text, p. 239, English translation, p. 257.

⁵ *History of India*, Vol. III, p. 374 (1871).

by Rieu¹ in the Catalogue of Persian Manuscripts in the British Museum (Or. 2039) and which is wrongly stated to have been transcribed for the use of Sir Henry Elliot from a manuscript dated 1139 A.H., under 'the supervision of Nayyir Rakhshān² (Diyā'uddīn Khān)'; this conclusion is based on a notice, dated Shāhjahānābād, July, 1853, at the end of the manuscript. The other known manuscript³ of the work is in the collection of the 'Aligarh University and forms like the British Museum manuscript an appendix of a manuscript of 'Afif's *Tārīkh-i-Firūzshāhī*. According to the colophon it was copied by Diyā'uddīn at Mount Abu on 12th Shawwāl 1299 A.H. (27th August, 1882). The contents of the two manuscripts, so far as they can be judged from a study of the English translation of the British Museum manuscript and the copy of the 'Aligarh manuscript, are almost identical; both of them constitute an appendix to 'Afif's *Tārīkh-i-Firūzshāhī*, and whereas the former was copied under the supervision of Nawwāb Diyā'uddīn Aḥmad Khān of Lohārū, the latter was apparently copied by the Nawwāb himself.

The question of the authorship of this work need not be discussed at length. The independent testimony of authors like 'Afif and Nizāmuddīn Aḥmad leaves no doubt about the Sultān having prepared an account of his accomplishments in a work entitled *Futūḥāt-i-Firūzshāhī*; manuscripts of this work were current under this name in the sixteenth century; while the style of composition and the contents of the work fully confirm its authorship by Sultān Firūz.

Hodivala⁴ recently suggested the probability of the existence of more than one recension of this work. He bases his conclusion on the inventory of the public works of Firūz and the reference to the administration of poison to him by his enemies detailed in the *Ṭabaqāt-i-Akbarī*, and which are not to be found in the English translation of the *Futūḥāt* by Dowson.⁵ Against this view it may be urged that Nizāmuddīn⁶ does not state definitely that he based his account entirely on the

¹ Rieu, C., *Cat. Persian MSS. in the British Museum*, III, p. 920 (1883).

² Nawwāb Diyā'uddīn Aḥmad Khān of Lohārū. He was a well-known scholar of Persian and Urdū and wrote under the pen names of *Nayyir* in Persian and *Rakhshān* in Urdū. According to Sri Rām, the author of *Khumkhāna-i-Jāwīd* (Vol. III, p. 378, 1917), he helped Sir Henry Elliot materially in collecting information for his famous *History*. He died in 1302 A.H. (1884 A.D.).

³ A manuscript is stated to be in the collection of Khān Bahādūr Zafar Ḥasan, but I have not been able to secure it for collation with the 'Aligarh manuscript.

⁴ Hodivala, S. H., *Studies in Indo-Islamic History*, p. 344 (1939).

⁵ Elliot's *History of India*, Vol. III, pp. 374-388 (1871).

⁶ *Loc. cit.*, text, p. 241, translation, p. 260.

Futūhāt. In fact his statement¹ that 'whatever (information) could be obtained about the construction of buildings and his beneficent foundations, is detailed here', leaves little doubt that the account is a summary of all available information. In regard to the inventories of the works, it may further be noted that the figures as given by Nizāmuddīn differ very materially from those of Firishtah.² It appears certain, therefore, that the figures in the two works could not have been taken from the same source but were independent estimates of the two historians. In this connection a reference may also be made to Thomas³ who was of the opinion that Nizāmuddīn's totals 'though not obviously exaggerated as Ferishta's are clearly fanciful'. The suspicion about the inaccuracy of these figures is also confirmed by the fact that they are not mentioned in any of the contemporary works such as 'Afī's History, *Sirat-i-Firūzshāhī* and *Munsh'āt-i-Māhrū*. In view of the above facts it is not necessary to postulate a second recension of the *Futūhāt* until one is discovered.

From the literary point of view, this work has distinctive merits. It is written in a very simple style and is singularly free from the verbiage of words which is a dominant feature of contemporary literary works such as 'Afī's *Tārīkh-i-Firūzshāhī*, *Sirat-i-Firūzshāhī* and *Munsha'āt-i-Māhrū*. It also differs strikingly from the usual type of insipid, pompous royal manifestoes, and is free of conventional phrases and phraseologies. On the other hand, the work is full of life and vigour and in its pages the Sultān pours forth the innermost feelings of his heart and attempts to make known to his subjects and successors his endless efforts in the path of righteousness, as he conceived it.

The historical importance of this royal work cannot be exaggerated. Like the inscriptions of the Emperor Asoka, it echoes to us the thoughts and feelings that animated the Sultān. He devoted his kingly power and all efforts to the extirpation of various sects and denominations that had arisen in Islām, for example the *Shī'ahs*, the *Mulhids* and the *Idāhatīs*, to the suppression of many innovations, unlawful and forbidden practices that had crept into the religious observances, to the proselytization of the large Hindu population by persuasion and the remission of the *Jizya*, and to the destruction of the new, if not the old temples built by the Hindūs. He used all his efforts for the purification of the Faith and for the application

¹ B. De's translation of the passage:

آنچه از بنای عمارات و بقاع خیر او یافته شد باین شرح است.

does not convey the exact sense of the original.

² *Tārīkh-i-Firishtah*, Bombay Lith. Edn., Vol. I, pp. 272, 273 (1832).

³ Thomas, E., *Chronicles of the Pathan Kings of Delhi*, p. 291 (1871).

of the principles enjoined by Islām in connection with administrative matters. He gave up the usual royal ways of living and adopted a simple, religious life. He discarded the purple and scarlet robes and cast aside the gold and silver vases, cups, plates and jugs which were used on the royal table. The paintings and portraits that adorned the inner apartments of the Sultān's palace were torn down from the walls, while the carvings and effigies were obliterated from the walls of the palaces, other buildings, etc. Various practices which were contrary to the laws of Islām were interdicted. The visit of Muslim women to the tombs of saints and recluses was banned. Mutilation, tortures and various types of hair-raising, cruel punishments were done away with. Oppressive cesses which were wrung from the subjects were abolished; Madrasas and hospitals were built and an extensive programme for digging canals and tree-planting was organized. All these measures confirm the Sultān's deep concern and solicitude for his subjects. It is a pity, however, that the beneficent rule of this benevolent and religious king was marred by his bigoted persecution of Shiaism and the image worship of the Hindūs in their newly erected temples.

With a view to making this important and rare manuscript ¹ easily available to students of Indian History, I have prepared a carefully revised edition of the text of the 'Aligarh manuscript' based on a copy prepared for Dr. Raghubir Sinh, the heir-apparent of the Sitamau State in Central India. My sincere thanks are due to Dr. Sinh for his kindness in allowing me the use of this valuable copy, and to Prof. M. Mahfūz-ul-Haqq for his invaluable help in editing the text. In view of material inaccuracies in Dowson's translation referred to already, I had also prepared an English translation, but the authorities of the Royal Asiatic Society of Bengal could not, on the score of the increased cost of printing, agree to its publication, more particularly as Dowson's translation is sufficiently accurate in regard to the historical facts detailed in the *Futūḥāt*.

¹ According to Storey, *Persian Literature—A Bibliographical Survey*, p. 509 (1939), an edition of the *Futūḥāt* was published at Delhi in 1885, but I have not succeeded in securing a copy from any source.

فتوحات فیروز شاہی

یا فَتَّاحُ

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

حمدِ بیحد و شکرِ بیحد مر خالقِ غفورِ مشکور را که
 من بیچارهٔ مسکین، فیروز بن رجب، غلامِ محمد شاه بن تغلق شاه
 را باحیای سننِ سنیّه و قلعِ بدعات و دفعِ منکرات و منعِ محرمات
 و تحرّیص بر ادای فرائض و واجبات توفیقِ رفیقِ بخشید -
 و صَلَوَاتِ بَیْشَارِ بر سیدِ کائنات که برای دفعِ رسوم و عادات
 مبعوث شد، بُعِثَ لِرَفْعِ الرُّسُومِ وَ الْعَادَاتِ، صَلَّى اللَّهُ عَلَيْهِ
 وَسَلَّمَ، و بر آل و اصحابِ او که به سعیِ جمیلِ ایشان مراسمِ
 جاهلیت مرتفع شد، رِضْوَانُ اللَّهِ تَعَالَى عَلَيْهِمْ أَجْمَعِينَ -
 اما بعد چون اظهارِ شکرِ نعمتی که از معطیِ حقیقی عطا شده باشد
 که وَ التَّحَدُّثُ بِالنِّعَمِ شُكْرٌ و سیدِ ولدِ آدم صَلَوَاتُ اللَّهِ عَلَيْهِ
 بتحدّثِ نعمتِ مامور شده، وَ أَمَّا بِنِعْمَةِ رَبِّكَ فَحَدِّثْ - بنده
 مسکینِ مبین را (نعمِ کثیره) ایزد عطا کرده است، خواستم تا بذکر

بعضی عطایای ربّانی شکر آنچه بمن بخشیده است بقدر طاقت بشری ادا نمایم، تا مگر در سلبِ بندگانِ شاکرِ نعمت متداخل باشم - از آن عطایای خالقِ رازقِ جَلّ جَلَّالُهُ وَ عَمَّ نَوَالُهُ یکی آنست که بدعتها و منکراتِ شرع در ممالکِ هندوستان شایع شده بود و مردم را عادت و طبیعت گشته و از سُنَنِ سَنِّیه انحراف نموده بودند، حق تعالی توفیقِ رفیقِ این بنده مسکینِ خویش گردانیده منع بدعات و دفعِ منکرات و قلعِ محرمات بر خود واجب دید، و سعی جمیل نمود تا بعون و نصرتِ حق مرسومِ باطله و معتادِ خلافِ شرع بکلی مندفع گشت و حق از باطل جدا شد *

اول آنست که در عهدِ ماضیه بسی خونِ مسلمانان ریخته شدی، و انواعِ تعذیب از بریدنِ دست و پا و گوش و بینی و کشیدنِ چشم و ریختنِ آرزیزِ گداخته در حلق و شکستنِ استخوانهای دست و پا به میخکوب، و سوختنِ اندام به آتشی، و زدنِ میخها بر دست و پا و سینه، و کشیدنِ پوست و زدنِ درها با میخهای آهنی، و بریدنِ پی، و دو نیم کردنِ آدمی بآره و بسیار انواعِ مثله کردن واقع می شد - اگر مِ الاکرمین ارحم

الْراحِمِینِ این بنده امیدوارِ کرمِ خود را بر دل متمکن گردانیده
تا مَمَّتِ والا نَهَمَت بر آن مصروف داشت که خون مسلمانانِ بناحق
ریخته نه گردد و هیچ نوع تعذیب نباشد و هیچ آدمی را مثله
نکنند،
* بیت *

چگونه شکر این نعمت گوارم که زورِ مردم آزاری ندارم
اینهمه که میکردند تا آنکه رعب در خاطرِ مردم بهم افتد و خوف
در دلها غالب گردد و امورِ سلطنت منظم ماند و این سخن را
مثلِ خود ساخته بودند،
* بیت *

ملک را اگر قرار میخواهی تیغ را بیقرار باید داشت
از فضلِ الهی که در حقِ من مسکین است آن تشدیدات
و تخویفات برفق و کرم و احسان بدل شد - و خوف و رجا
بدلِ خاص و عام زیادت بر آن جا گرفت، و هیچ احتیاج به قتل
و ضرب و ایلام و تشدید و تعذیب نماند، و این سعادت جز
به فضل و عنایتِ پروردگار میسر نشود:

کرم کن چو دستِ تو بالاتر است که بخشایش از خشم والاتر است
ترا چون ز باری بزرگی عطاست به تعجیل رسمِ سیاست خطاست
گر اول توقف کنی در قصاص توان گشت او را که بدهی خلاص

و لیکن چو قالب پراکنده گشت نیارد بفرمانِ تو زنده گشت
نگه کن که تا مادرِ مهرِ سنج بر آن طفلِ خود چند برده است رنج
مگو، مَرَدِ گُشتم صد اندر نبرد یکی زنده کن تات خوانند مرد
چو بر خود نداری روا نشتری مگش تیغ بر گردنِ دیگری
مکوش اندر آن کز تنی خون رود که جان باز نآید چو بیرون رود
بخوریزِ خلقِ مشو فتنه دوست ترا نیز خونست آخر بیوست
هزار آفرین بر چنان رهنمون که پیشِ بزرگان نکوشد بخون
زدولابِ چرخِ آنکسان راست آب که ایشان نیارند در خون شتاب
چو دشمنِ زبون کرده احسان بکن¹ بقدرتِ جوانمردیِ جان بکن

از عونِ الهی دل برین قرار گرفت که خونِ مسلم را
و عرضِ مؤمن را امانی کُلی باشد، و هر که از راهِ شرع برگردد
بر حکمِ کتاب (و) قضای قاضی بچیزی که مستحقِ آنست برسد،
الْحَمْدُ لِلَّهِ عَلَى تَوْفِيقِهِ ۝

دیگر از فضل و کرمِ حقِ جَلَّ وَ عَلَا در حقِ من آنست که
ذکرِ القابِ سلاطینِ ماضیه که از خطبِ جمعه و اعیاد دور شده بود

۱ جان کند - احسان کند : Text

و نامهای آن پادشاهان اسلام که بيمينِ همت و برکتِ نهمتِ ایشان
 بلادِ کفار فتح شد و اعلام (بر) هر دیاری مظفر گشت و معابد
 اصنام خرابی پذیرفت و مساجد و منابر معمور و مرتفع گشت
 و اعلاى کله طَبَّه شد و اهل اسلام قوی و حربیان ذمی گشتند
 نسبتاً منسیاً گشته بود، گفتم برسمِ معهود چنانچه بود القاب و اوصافِ
 همه در خطبها بخوانند و ایشان را بمغفرت یاد آرند، * بیت *

چو خواهی که نامت بود جاودان مکن نام نیک بزرگان نهان

دیگر از ایادی هادی، عَزَّ اسْمُهُ آنست که از عهد ماضیه
 وجوهاتِ باطله نامشروع و حرام در بیت المال جمع میکردند
 چنانکه مندوی برگ، دلالت بازارها، (و) جزاری (و) امیری
 طرب و کلفروشی، و جزیه سیول، و چنگی غله و کتاب بیلگری،
 و ماهی فروشی، و نَدافی، و صابونگری، و ریسمان فروشی
 و روغن گری و نخود بریان و ته بازاری و جیبه¹ و قار خانه
 و دادبگی² و کوتوالی و احتسابی و کرهی و چرائی و صادرات
 این جمله را از دفاتر دیوان گفتم که دور کنند و عمالِ ولایت

¹ Text: وجه.² Text: دادبکی.

هرکه این وجوهات را از خلق بستاند و جمع آرد بجزا و سزای
آن برسد،
* بیت *

دلِ دوستان جمع بهتر، که گنج خزانه تهی به که مردم برنج
مالی که از بیت المال جمع آید، همان وجوهات (باشد) که در شرع
مُصْطَفٰی صَلَّی اللّٰهُ عَلَیْهِ وَ سَلَّم آمده است و کتبِ دینیهِ بدان
ناطق است، یکی خراجِ اراضی و عشور و زکوة و دیگر جزیه
هنود و دیگر ترکات، دیگر خمسِ غنائم و معادن، و وجهی که
جمع کردنِ آن بحکمِ کتاب درست نباشد بهیچ وجه در بیت المال
جمع نکنند *

دیگر آنست که پیش ازین رسم و عادات بافشای بدعت
چنین شده بود که از غنائم چهار خُمس بدیوان جمع میکردند
و خُمس به غازیان میدادند و حکمِ شرع اینست که خُمس در
بیت المال جمع کنند و چهار خُمس به غازیان قسمت کنند
و بدهند، در حکم این عکسِ تام راه یافته بود، چون حکم
بر قسمتِ شرع نشود این غنائم را هرکه تصرف کند مرتکبِ حرام
شده باشد، و هر برده که ازو فرزند زاید ولد الزنا باشد، برای دفع

این گفتم که خمس در بیت المال جمع کنند و چهار خمس به غازیان دهند *

دیگر شیعی مذهبان که ایشان را روافض میگویند، بمذهبِ رفضِ شیعه مردم را دعوت میکردند و رسالهها و کتابها درین مذهب پرداخته و تعلیم و تدریس پیشه ساخته بودند و شیخین را رَضِیَ اللّٰهُ عَنْهُمَا سَبِّ صریح و شتم قبیح میگفتند، همه را گرفتیم و بر ایشان ضلال و اضلال ثابت شد، غالیان را سیاست فرمودیم و دیگران را به تعزیر و تهدید و تشدید زجر کردیم *

دیگر طائفه ملحدان و اباحتیان جمع شده بودند و خلق را به الحاد و اباحت دعوت می کردند و در شبی معین و مقامی متعین جمع می شدند از مردمانِ مَحْرَم و غیر مَحْرَم و طعام و شراب در میان می آوردند و میگفتند این عبادتست، و صورتی ساخته مردمان را درین فعل می آوردند که پیشِ آن سجده بکنند و زنان و مادران و خواهران (در) شب جمع می آوردند، جامه هر که بر دست کسی از ایشان می افتادی با او زنا کردی - پیرانِ ایشانرا

سرها بریدم و دیگران را حبس و جلا و تعزیر فرمودم تا شرّ ایشان از حَوْزَه¹ اسلام بکلی مندفع گشت *

دیگر قومی بلباسِ دهریّه و ترک و تجرید مردمان را گمراه میکردند (و) مرید میساختند و کلمات کفر می گفتند، آن گمراهان را احمد بهاری نام مرشدی بود و در شهر ساکن و طائفه از بهار او را خدا میگفتند - آنجماعت را مقید و مسلسل نزد ما آوردند - او سبّ نبی میکند و میگوید که کسیکه نه حرم (دارد) چه جلالت نبوت او باشد و از یکی مریدان او این معنی بر ایشان ثابت شد - هر دو را به قید و زنجیر سیاست فرمودیم - و دیگران را به توبه و انابت امر کردیم، و هر یکی را بهر شهری جلا کردیم تا شرّ این جماعت پریشان دفع شد *

دیگر در شهرِ دهلی شخصی رکن نام لقب مهدی گفته که مهدی آخر الزّمان منم، مرا علم لدنی حاصل شده است، و من از پیش کسی تعلیم و استفاده نکرده‌ام، و اسمای جمیع مخلوقات که آن جز آدم نبی عَلَیْهِ السَّلَامُ هیچ پیغمبری (را) علم نبوده است

¹ Text: خورّه.

مرا معلوم شده است، و اسرارِ علمِ حروف که بر هیچ کس
 مکتشوف نبود بر من کشف گردیده، و برین ادعا کتابها نوشته
 و بخلق را در غوایت و ضلالت استدعا نموده و گفته که رکن الدین
 رسول الله منم - درین سخن مشائخ پیش ما گواهی دادند که
 اینچنین گفته است، و ما ازو شنیدیم - چون او را پیش ما
 آوردند، از حالِ اضلالِ او استفسار کردیم - بدین بدعت
 و ضلالت مقرّ بود - علمای دین گفتند او کافر شده است
 و مباح الدّم گشته - چون این فتنه و فساد از نفسِ خبیثِ او
 در اسلام و اهلِ سنت و جماعت پیدا گشته، اگر در دفعِ آن
 اهمال دهند معاذ الله چنان سرایت کند که بسیار مسلم گمراه شوند،
 و از دینِ اسلام بگردند و ازو فتنه قائم شود، که بسیار مردم
 بدان سبب هلاک گردند - گفتیم تا در مجمعِ علمای عالم فساد
 و افساد و اضلالِ آن خبیث را ندا کنند و بگوشِ خاص و عام
 برسانند و به فتویٰ علمای دین و ائمه شریعت مستوجبِ سیاستی
 که باشد به نفاذ رسانند - او را با اشخاصیکه معتقد و مرید
 و مساهمِ او بودند بکشتند و خاص و عام خلق درآمده و گوشت
 و پوست و اعضای او را پاره پاره کردند، و شرّ او چنان

دفع شد که جهانیان را موجبِ انتباه گشت، و نصرت و عنایتِ الهی در دفعِ انواعِ این شرّ و در قلعِ امثالِ این بدعات حقّ جَلّ و علاّ منِ بندهٔ مسکینِ خویش را میسر گردانید و بر احیای سننِ توفیق داد - غرض از ذکرِ ادایِ شکرِ باری است، (تا) به استماع و مطالعهٔ این محرمات هرکرا اصلاحِ دین خود مطلوب باشد، این طریقه را مسلوک دارد تا مثاب گردد و ما بدلالِ این خیر امیدوارِ ثواب باشیم - وَ الْمَوْقِفُ هُوَ اللَّهُ ۞

دیگر شخصی از ملازادگانِ عینِ ماهرو در عرصهٔ گجرات خود را شیخی ساخته بود و جمعی را مرید گرفته، انا الحق، میگفت، و مریدان را می فرمود، چون من، انا الحق، بگویم، شما گوئید، 'توئی، 'توئی، و میگفت اَنَا الْمَلِكُ الَّذِي لَا يَسْمُوتُ و رسالهٔ نوشته که درو کلماتِ (کفر؟) بود - او را زنجیر کرده پیشِ ما آوردند و برو ثابت شد - او را نیز سیاست فرمودیم و کتابی که ساخته بود بسوختیم تا از میانِ موحدانِ اهل اسلام این فساد نیز دفع شد ۞

دیگر رسم و عادتِی که در دینِ اسلام جائز نیست در شهرِ مسلمانان شایع شده بود که عورات در آیامِ متبرکه جماعه جماعه

بالکی سوار و گردون سوار و ڈوله سوار و اسپ سوار
و ستور سوار فوج فوج و جوق جوق پیاده از شهر بیرون می آمدند،
بزارها میرفتند و زندان و مردمِ اوباش که بهوای نفس مبتلا اند
و از دیانت عاری (جمع میشدند و) فتنه و فساد که ازین حرکت
باشد پوشیده نیست، میکردند - و بیرون رفتنِ عورت شرعاً
منهی است، - فرمودیم تا هیچ عورت بزار نه رود، هرکه رود
او را تعزیر کنند - این زمان به عنایتِ حق جَلَّ و عَلَا مجال
نیست که مخدرات و مستوراتِ مسلمانان بیرون آیند، و به زیارتها
روند - این بدعت نیز منقّی شد *

دیگر از عطایای الهی آنست که هنوز مزماک (؟) و بت پرست
که زرِ ذمه پذیرفته اند و جزیه قبول کرده و خانمانِ ایشان مصنون
مانده، بتخانهای جدید در شهر و حوالی بنیاد نهاده بودند و در
شرعِ نبوی احداثِ بتخانه روا نه باشد - بتوفیقِ حضرتِ الهِ آن
بناهای فاسدِ ایشان را خراب کردیم، و ائمه کفر که دیگران را
اضلال می کردند بکشتیم، و عوامِ ایشان را به تعزیرات زجر کردیم
تا این فساد بکلی افتاد *

دیگر آنست که در موضع ملوه حوضیست که آنرا کُند میگویند، بتخانها ساخته بودند و جماعتی از هندو با اتباع در روزِ معین بمعتادِ کثیر¹ سواران با اسلحه و برگستوانهای بسیار زنان و بچگانِ ایشان پالکی و گردون سوار هزاران هزار جمع میشدند و بت پرستی میکردند - درین فساد چنان غلو کرده بودند که اهل بازار انواع نعمتها در آنجا می بردند و گریزی² کرده می فروختند - طائفهٔ مسلمانانِ بیدیانت بهوای نفس در اجتماعِ ایشان مسام می شدند - چون این کیفیت بسمع ما رسید بتوفیقِ ربّانی خود برای دفعِ این فساد که مضرتِ آن در دینِ اسلام سرایت میکرد، عزم کردیم و در روزیکه ایشان جمع میشدند آنجا رفتیم و اشخاصیکه پیرِ ایشان بودند و اغوا و اضلال میکردند، فرمودیم تا آنها را بکشند و سائرِ هندو را بتعزیراتِ مولم منع کردیم و بتخانه را خراب کردیم و آنجا مسجد بر آوردیم و قصباتِ معمور گردانیدیم یکی تغلق پور دوم سدلاپور نام نهادیم - این زمان بجائیکه کافرانِ مزماک (؟) و معبدِ اصنام ساخته بودند از فضلِ باری جَلَّ و عَلَا مسلمانانِ معبودِ برحق را سجده میکنند و تکبیر و اذان

¹ Text : یکدیگر .

² Text : با برآوری .

و جماعت قایم میدارند، و آنجا که کتار مسکن خود ساخته بودند
مسلمان ساکن و متوطن گشتند بکلمه لَا إِلَهَ إِلَّا اللَّهُ ذاکر
و وطب اللسان میباشند و اَلْحَمْدُ لِلَّهِ عَلَى الْإِسْلَامِ *

دیگر اخبار کردند که در موضع صالح پور بتخانه جدید
بعضی از هنود عمارت کرده اند، و بت پرستی میکنند - آنجا نیز
کسان فرستادیم تا بتخانه خراب کنند و شرّ آن اشخاص را که در
گمراهی اصرار نموده بودند دفع کردیم *

دیگر آنکه در قصبه گوهانه بعضی از هنود بتخانه جدید
ساخته اند و جماعتی از مشرکان جمع میشوند و بت پرستی میکنند
ایشانرا گرفته پیش ما آوردند - کسانی که ازیشان بنیاد فساد بودند،
فرمودیم تا از حال اضلال شان ندا کنند و پیش در سرای
اعلی بکشند و کتابهای کفر و بتان و اسباب بت پرستی که ایشان
آورده بودند، گفتیم تا در نظر عامه خلق در مقام سیاست بسوزند
و دیگران را به تهدید و تعزیرات منع شد تا انتباه دیگران باشد
و هیچ ذی در دار اسلام این جرأت نتواند کرد *

دیگر در عهد ماضیه معتاد شده بود اوانی زر و نقره
بوقت خرج مایده استعمال میکردند و بندهای تیغ و چله ترکش

از زر مرصع میساختند، آنرا منع کرده حلیه سلاح خود از استخونهای شکاری ساختیم و باستعمالِ اوانی که در شرع مباح است اعتیاد کردیم *

دیگر در آیامِ سابقه رسم و عادت برین بود که جامها مصور می کردند و بر وجه تشریف از درگاه سلاطین مردم را می پوشانیدند، و همچنین بر لگام و زین و قلاده مرکب و بجرهایی عود و در طاس و قدح و کوزه و طشت و آفتابه و در خیمها و پردها و تخت و کرسی و سائر آلات و ادوات صورت می نگاشتند و تمثال می داشتند بهدایتِ ربّانی و عنایتِ سبحانی گفتیم جمله صورت و تمثال از جمع این چیزها دور کنند و آنچه محظور شرع نیست و جائز و مباح است بسازند صورت و تمثال که در دار و جدار و قصور تصویر میکردند، فرمودیم تا جمله را محو کنند *

دیگر پیش ازین اکثر لباسِ بزرگان از ابریشم و زردوزیهای مغرق نامشروع بودی - حق سُبْحَانَهُ تَعَالٰی توفیق داد تا ملبوسات همچنان شد که در شرع نبوی مباحست و علّمهای زردوزی و کلاه و زربفت که عرض آن بقدر چهار اصابع زیادت

نباشد اختیار افتاد، و آنچه نامشروع و ناجائز و منکر و منہی
 شرع بود دور کرده شد **اَلْحَمْدُ لِلّٰهِ عَلٰی الْاِسْلَامِ** ۰

بعضی از مواهبِ آلهی این بنده بیچاره را عطا شد بر تشدید
 مبانی خیرات توفیق داد، بسی مساجد و مدارس و خوانق
 بنا کردیم نا علما و مشائخ و زهاد و عباد در آن مقامها معبود
 برحق را عبادت کنند و بانی خیر را بدعای مدد نمایند، و حفرِ
 آبها و غرسِ اشجار و وقفِ اراضی بر نهجِ شرع متفق و مجمع علیه
 است و در ملتِ اسلام علمای شریعت را در وی اجماع است
 و درو شکی و شبهی نه. ادرار معین و سهامِ مصارف معین کردند^۱

^۱ این واقعه از بیانات تاریخ فیروز شاهی و سیرت فیروز شاهی واضح میشود:
 عقیق، مؤلف تاریخ فیروز شاهی میگوید (صفحه ۱۳۰): «آن شهربار دیهای
 بسیار در زمین اموات آبادان گردانیده حاصلات آن مقامات باسم علما و مشائخ
 معین گردانیده و آنرا در سهام معین کرده، ۰»

و نیز در (صفحه ۱۷۹) زمره علما و فرقه مشائخ و صلحای بلاد و مالک را
 حضرت فیروز شاه بتوفیق آله مبلغ سی و شش لک تنگه تعین کرده بود ۰

بر وفق سیرت فیروز شاهی (نسخه خطی سر جدو نانیه سرکار، صفحه ۲۹۱):
 «آن املاک را بسهام معین مصارف تعین گردانید، ۰»

تا همیشه حاصلِ آن به بندگانِ خدا برسد ذکرِ آن مشروحاً در
وقف نامه مذکور است *

دیگر از مواهبِ آلهی یکی آنست که عمارات و بناهای
گذشتگان و سلاطینِ ما تقدّم و امرای ماضیه که بمرورِ ایام و کرورِ
اعوام خلل پذیرفته بود بمرمت و عمارتِ مجددِ بیاراستیم، و استحکامِ
آنها بر عمارتِ خود مقدم داشتیم، چنانچه مسجدِ جامعِ دهلی قدیم
که بنای سلطان معز الدین سام است، جهتِ قدمِ بنا محتاجِ مرمت
و تعمیر شده بود چنان مرمت کرده شد که به تازگی استحکام
بگرفت *

دیگر مقبرهٔ سلطان معز الدین سام را که دیوارِ غربی
و تخته‌های در کهنه و فرسوده شده بود هم نو کرده آمد، و بجای
چوبینه درها و طاقها و زینه‌ها از چوبِ صندل ساخته - منارهٔ
سلطان معز الدین سام را که از حادثهٔ برق افتاده بود بهتر از آنکه
بود از ارتفاعِ قدیمی بلندتر مرمت کرده شد *

دیگر حوضِ شمسی که درآمدهای آب را مردمانِ بیدیانت
از بالا بسته بودند و درآمدِ آب منقطع شده بود، آن متجاسرانِ
ناحفاظ را به تعزیرات زجر کردیم و درآمدهای آبِ بسته کشادیم *

دیگر حوضِ علائی که انباشته و بی آب شده بود و خلقِ شهر درونِ حوضِ زراعت میکردند و چاهها کافتہ بودند، و آب از آن چاهها می فروختند - بعد قرنِ حُفرت کردیم تا غدیرِ عظیم از سال تا سالِ دیگر پر میشود *

همچنین مدرسهٔ سلطان شمس الدین ایلتمش را محلهای که انهدام پذیرفته بود، عمارت کرده درها از چوبِ صندل نهادیم، و ستونهای مقبره که افتاده بود، باز بهتر از آن که بود راست کردیم - صحنِ مقبره را وقتِ بنا کُچِ نکرده بودند آنرا کُچِ کرده شد، و در گنبدِ نردبان از سنگِ تراشیده زیاده و در چهار برجِ پشتیبان ریخته برآورده شد *

مقبرهٔ سلطان معز الدین پسرِ سلطان شمس الدین که در ملکپور است چنان مندرس شده بود که گویا پیدا نبود، آنجا گنبد و چبوتره و محوطهٔ ریخته عمارتِ نو کرده شد *

مقبرهٔ سلطان رکن الدین پسرِ سلطان شمس الدین که در ملکپور است محوطهٔ مرتب کرده گنبدِ جدید برآورده و خانقاه عمارت کرده شد *

مقبره سلطان علاء الدین غربی مسجدی که درون مدرسه
است فرش تا نشیب مرتب کرده شد *

مقبره سلطان قطب الدین و فرزندان سلطان علاء الدین
خضرخان و شادی خان و فریدخان و سلطان شهاب الدین و سکندر خان
و محمدخان و عثمان و نبیرگان و فرزندان او را مقابر از سر نو
مرمت کرده شد *

درهای گنبد و جعفریهای مقبره شیخ الاسلام شیخ نظام
الحق والدین هم از صندل ساخته و قندیلهای زرین با زنجیرهای
زر در چهار زاویه کنج گنبد آویخته و جماعت خانه جدید
بنا کرده که آنچنان پیش ازین آنجا نبوده *

مقبره ملک تاج الملک کافوری که وزیر بزرگ سلطان
علاء الدین بود و عقل و کیاست وافر داشت و بسیار ملک او
گرفته بود که در آنجا پای اسپان پادشاهان ماضیه نرفته بود و خطبه
سلطان علاء الدین اظهار کرده بود - پنجاه و دو هزار سوار
داشت - مزار او بزمین برابر شده بود و مقبره پست گشته - از
سر مقبره مرمت کنانیده شد که دولتخواه و حلالخوار بود *

در دار الامان که مضجع و مرقدِ خدومانست درها از چوبِ صندل و بر قبورِ آن خداوندگاران از پردهای درِ خانه کعبه سائبان افراخته، مصالحِ این مرمت و عماراتِ این مقبره و مدارس از اوقافِ قدیمِ ایشان مستقیم داشته شد - و در جایی که پیش ازین وجهی معین نبود و برای صادر و وارد فرش و روشنائی و اسباب که در خورِ آن مقام باشد دهها معین کرده شد که محصول مدام آنجا خرج شد و همچنین، جهان پناه، که بنای سلطانِ مغفورِ مرحوم محمد شاه است که خداوند، ولی نعمتِ ما بود، و من مخصوص پرورده و برآورده اویم، معمور داشته شد، و همچنین مجموعِ حصارها که بنا کرده سلاطینِ ماضیه در مملکتِ دهلی است جمله را مرمت کرده شد.

دیگر در مدارس و مقابر و مزارهای سلاطینِ کامگار و مشایخِ کبار برای صادر و وارد اسباب که در آن مقامهای متبرکه درکار بود دهها و زمینها و اوقافِ قدیمِ ایشان مستمر و جاری داشتیم، و زیادت آنکه در جایی که وجهی از اوقاف و غیر آن معین نبود معین کردیم تا علی الدوام در آن محل خیر

قایم باشد و آینده و رونده و اربابِ علوم و اصحابِ معارف
بیاسایند و ایشانرا و ما را به دعای خیر یاد کنند *

دیگر حق تعالی میسر گردانید که دار الشفا بنا کردیم تا از
خاص و عام هرکرا مرضی طاری میشود و برنجی مبتلا می گردد
آنجا بیاید - اطبا حاضر میباشند تا تشخیصِ مرض کنند و علاج
و پرهیز فرمایند، و دوی آن بدهند و وجه دوا و غذا از سهام
اوقافها بدهند - جمهورِ مریضان از هقیم و مسافر وضع و شریف
احرار و عبید آنجا می آیند، و معالجه ایشان میشود، بفضلِ حق
شفا مییابند *

دیگر از حضرت ذوالجلال و قادرِ پرکمال این بنده عاصی
توفیق یافت که اشخاصیکه در عهدِ خدایگانِ مغفورِ مرحوم محمد شاه
السلطان طابَ مَـثَـوَّاهُ که خداوندگار و مخدوم و مربی من بود،
به تقدیرِ الله تعالی کشته شده بودند، و کسانی که اعضای ایشان از
چشم و بینی و دست و پا ناقص گشته، ورثه ایشانرا از قبل
بادشاهِ مغفور مرحوم استرضا نموده، و هر یکی را باموال راضی
گردانیده، خطوطِ خوشنودی موکد بشهودِ مستند در صندوق کرده
بدار الامان مقبره سلطان مغفور مرحوم نَوَرِ الله مَرَقَدَهُ جانبِ
سر داشته تا حق تعالی به کرمِ عمیم خویش آن مخدوم و مربی

ما را غریقِ رحمت گرداناد، و ایشانرا از آن ولیِ نعمتِ ما از خزائنِ
همیش خوش کناد *

دیگر از عطایای الهی آنست که دهها و زمینهای املاکِ
قدیم بوجوه در عهودِ ماضیه سلب شده بود و در دیوان از تصرف
و املاک بیرون رفته - گفتیم تا هرکه حجتِ ملک دارد در
دیوانِ شرعی بیارد - بعد ثبوت دهی و زمینی که به تصرف
درآورده و جز آن هرچه مملوکِ او باشد متصرف شود -
بِحَمْدِ اللَّهِ وَ تَوْفِيقِهِ بدین فضیلت موفق شدیم و حقوق به مستحقین
رسید *

دیگر بترغیبِ اهلِ ذمه بسوی دین هدیِ توفیق یافتیم
و باعلام گفتیم هرکه از کفار کلمه توحید گوید و دینِ اسلام پذیرد،
چنانکه در دینِ مصطفی صلی الله علیه و سلم آمده است جزیه
ازو دور کنند¹ - حدیثِ آن بگوشِ عام رسید - فوج فوج

¹ در سیرتِ فیروز شاهی است: «هم از بواعثِ دیانت و احسان آن ست که
بر اهل ذمه که بر ایشان وضعِ جزیه شده چنان ترغیب فرمود که در دینِ اسلام فوج
فوج و قبله قبله درآمدند و کلمه طیبه گفتند و در دائره اسلام دخیل گشتند، فرمان
شد تا هرکه از هندو بیاید و اسلام آرد ازو مالِ جزیه که از راه شرع از ایشان
مرفوع است هیچ کس از عمال طلب نکند (نسخه خطی سر جدو ناتنه سرکار،
صفحه ۱۷۰) *

جماعه جماعه هندو آمدند و به شرفِ اسلام مشرف شدند،
و همچنین الی یومِنَا هَذَا از اطراف می آیند و ایمان می آرند
و جزیه ایشان دور می شود، و به انعامات و تشریفات مخصوص
میگردند، الحمد لله رب العلمین *

دیگر از مواهبِ الهی آن است که عرض و مالِ بندگانِ
خدای تعالی در عهدِ دولتِ ما در امن و امان محروس و مصون
می باشد و روا نمیداریم که قلیل و کثیر و نقیر و قطمیر از ملکِ
هیچ کسی کشیده شود و بسیار مردمِ مغوی سعایت نمودند که فلان
تاجر چندین لک و فلان عامل چندین لک دارد و ساعیان را
به تعزیرات و سیاست زبان کوتاه کردیم تا از شرّ این طائفه،
خلقِ این گشت، هر آینه بدین شفقت همگنان مخلص و دوستدارِ ما
شدند - * قطعه *

نامِ نیکو طلب که گنجِ سخا بهتر از گنجِ خواسته صد بار
یک ثنا به که چند خرمنِ گنج یک دعا به که مال صد خروار

دیگر بعنایتِ حق تواضعِ فقرا و مساکین و استمالتِ قلوبِ
ایشان در دلِ ما تمکن یافت تا هر جا فقری و گوشه نشینی یافتیم
برای ملاقاتِ او قدم زدیم و بدعا استمداد نمودیم تا فضیلتِ
نِعَمِ الْأَمِيرُ بِبَابِ الْفَقِيرِ اکتساب کرده شود *

دیگر هر کرا از اهل دولت عمر طبعی بکمال رسید و معمر گشت، بعد ترتیب وجه معاش او اجازت دادیم و نصیحت کردیم تا با استعداد آخرت مشغول گردد و از منکرات شرع و دین که در جوانی ارتکاب نموده باشد تائب گردد، و از دنیا اعراض کند و بامور آخرت روی آورد،

* رباعی *

چون پیر شدی کار جوان نتوان کرد
به پیریت کافری نهان نتوان کرد
در ظلمت شب هر آنچه کردی کردی
در روشنی روز همان نتوان کرد

دیگر بر قضیه آن که،

* قطعه *

طریق و رسم صاحب دولت آنست
که بنوازند مردان نکو را
دگر چون عمر آنکس منقضی شد
نکو دارند فرزندان او را

از اصحاب شغل کسانی که مرتبه و جاهی داشتند چون به تقدیر الله تعالی از دار غرور بسرور بشدند، آن شغل و جاه به فرزندان شان مقرر داشتیم بنوعی که از پدران در منزلت و نعمت و شان باشند، در آن مرتبه نقصان راه نیابد،

قطعه *

رسم و آئینِ بادشاهان است که خردمند را عزیز کنند
و ز پس عهدِ او وفاداری با خردمند زاده نیز کنند
دیگر بزرگترین و بهترین دولت که وَاهِبُ الْمُلْکِ جَلَّ جَلَّالَهُ
وَعَمَّ نَوَالُهُ این بنده را بخشیده آنست که باطاعت و اخلاص
و دولتخواهی و امثالِ امرِ حضرتِ خلافتِ پناهی ابنِ عم
رسولِ الله صلی الله علیه و آله و سَلَّمَ که صَحَّتِ سلطنتِ بدان
نیابت است، و دوست نباشد تا خود را بخادمیِ حضرتِ مشرف
نگرداند و اذن از آن درگاهِ مقدسه نیابد، توفیق داد تا اعتقاد برین
رسوخ یافت و از حضرتِ مقدسه دارالخلافه مناشیرِ باذنِ مطلق
و نیابتِ خلافتِ صادر شد و از حضرتِ اعلیٰ امیرِ المؤمنین
در منشورِ مبايعت به تشریفِ خطابِ «سید السلاطین»، مشرف
گشت، و به تواتر تشریفات و نوازش به خلعتهای درگاهِ خلافت
از طلیسان و عَلم و خاتم و سیف و فوطه بر جهانیان مفاخرت
و مباحات حاصل آمد *

این سریره آن بود که بذکرِ این مواهب کرده شد، از
هزار یکی و از بسیار اندکی شکرِ منعم بحقیقت گزارده شود

و دیگر آن کسانی که طالبِ خیر و سعادت باشند، این را که
بخوانند بدانند که این طریقِ مستحسن است و مروتِ مقتضی
نیست که باتباعِ آن توفیق نیابد، ایشان به عملِ خود مثاب گردند
و ما بدلالِ خیرِ ماجور، آدَالُ عَلَی الْخَیْرِ کَفَاعِلُهُ - تمام شد،
فتوحاتِ فیروز شاهی *

The Solar Eclipse in the Rgveda and the Date of Atri.

By P. C. SENGUPTA.

(Communicated by Prof. M. N. Saha, F.R.S.)

In the present paper we propose to find the time of the solar eclipse described in the *Rgveda*, the time which was undoubtedly that of the ṛṣi Atri, who was the author of the hymn V, 40, 5-9. The first attempt at finding the date of this event was made by Ludwig¹ in May, 1885, with the help of the Viennese astronomer Oppolzer. Ludwig imagined that there were references to four eclipses of the sun in the *Rgveda*, viz., V, 40, 5-9; V, 33, 4; X, 138, 3a and X, 138, 4. I have examined all these references and my view is that only the first reference describes a real eclipse of the sun; the other three relate to the summer solstice day and the appearance of clouds. Ludwig's paper was severely criticised by Whitney in 1885 under the caption 'On Professor Ludwig's views respecting total eclipses of the sun as noticed in the *Rgveda*', in the JAOS, xiii, pp. lxi-lxvi for October of the same year. Whitney ends his discussion with the following remarks:

'There are many other versions and statements and inferences in Prof. Ludwig's paper to which serious exception might be taken; but it was best to limit the discussion to the main point had in view, namely to show that no result possessing even presumptive and provisional value as bearing on ancient Hindu Chronology has been reached by his investigation.'

We shall show that Prof. Ludwig's interpretation of the *Rgveda* reference was not correct as this paper is developed.

Prof. C. R. Lanman in the year 1893, wrote a paper on '*Rgveda*, V, 40 and its Buddhist parallel' in the Festschrift Roth 187. Eclipse du soleil par *Svarbhānu* parallel *Samyukta Nikāya*, II, 1, 10 cited in Louis Renon's *Bibliographie Vedique*. We can only say that such similarity of statements as to solar eclipses in the two works cannot establish that the Atri tradition was contemporary with the *Samyukta Nikāya* event. To settle chronology by a reference to a solar eclipse is a very difficult matter. No easy going researches can be of any value.

Without making further attempt at tracing all the different attempts made before by other researchers, we proceed to

¹ Paper published in *Sitzungsberichte* of the Bohemian Academy of Sciences in 1885.

interpret the *Rgveda* reference V, 40, 5-9. The original Sanskrit *rcas* are:—

यत्त्वा सूर्यं स्वर्भानुस्तमसाविध्यदासुरः ।

अक्षेत्रविद्यथामुग्धो भुवनान्यदीधयुः ॥ ५ ॥

स्वर्भानोरधयदिन्द्रमायाऽब्यवोदिवो वर्तमानाऽब्यवाहन् ।

गूल्हं सूर्यं तमसापव्रतेन तुरीयेण ब्रह्मणाविन्ददत्रिः ॥ ६ ॥

मा मामिमं तव सन्तमत्रऽइरस्याद्रुग्धो भियसा निगारीत् ।

त्वं मित्रोऽब्यसि सत्यराधास्तौ मेहावतं वरुणश्च राजा ॥ ७ ॥

प्रावणो ब्रह्मायुयुजानः सपर्यन् कौरिणादेवान् नमसोपशिक्षन् ।

अत्रिः सूर्यस्य दिवि चक्षुराघात् स्वर्भानोरपमायाऽब्यधुक्षत् ॥ ८ ॥

यं वै सूर्यं स्वर्भानुस्तमसाविध्यदासुरः ।

अत्रयस्तमन्वविन्दन् न ह्यन्येऽब्यशक्नुवन् ॥ ९ ॥

Wilson's translation runs as follows:—

5. 'When, Surya, the son of Asura, Svarbhānu, overspread (rather "struck") thee with darkness, the worlds were beheld like one bewildered not knowing his place.'

The second line is perhaps more correctly translated as, 'the worlds shone lustreless like a confounded tactless person'.

6. 'When, Indra, thou wast dissipating those illusions of Svarbhānu which were spread below the sun, then Atri by his fourth sacred prayer (*turiyeṇa brahmaṇā*), discovered (rather "rescued") the sun concealed by the darkness impeding his functions'.

Whitney explains that '*Svarbhānu*' means simply 'skylight'. Whatever that may be, what interests us here is the phrase '*turiyeṇa brahmaṇā*', 'by the fourth sacred prayer' as translated by Wilson after Sāyana. Some say that this means a quadrant or the fourth part of a graduated circle which we cannot take to be correct. The use of the graduated circle or its fourth part in Vedic times was an impossibility. We could admit the validity of the interpretation if the event belonged to Brahmagupta's time (628 A.D.). Further it is a barren meaning which throws no light on any circumstance of the eclipse. As Wilson following Sāyana translates the phrase as 'by the fourth sacred prayer', we may take this to be the only correct interpretation. As the fourth prayer of the day most likely belonged to the fourth part of the day, we interpret that the eclipse in question was finished in the fourth part of the day.

Again the phrase '*turiyeṇa brahmaṇā*' may be interpreted in a different way. The word '*brahman*' itself may mean the summer solstice day. In the *Sāṅkhāyana Āraṇyaka* (Keith's

translation) the *mahāvṛata* day is spoken of as 'This day is *brahman*' (I, 2) and in another place the same day is thus referred to—'*brahman* is this day' (I, 18). In the *Jaiminīya Brāhmaṇa* (II, 409-10) we have, 'मध्यतः संवत्सरस्य विधुवति महाव्रतम् उपयन्ति', which means that the *mahāvṛata* ceremony used to be performed on the *viṣuvant* or the summer solstice day. We thus understand that '*turiyeṇa brahmaṇā*' means 'by the fourth part of the summer solstice day'. In other words, the eclipse in question was over in the fourth part of the summer solstice day itself. (Here '*turiyeṇa brahmaṇā*' = '*turiyeṇa kālena brahmadivasena*'.)

7. (Sūrya speaks); 'Let not the violater, (Atri), through hunger swallow with fearful (darkness) me, who am thine; thou art Mitra, whose wealth is truth; do thou and the royal Varuna both protect me'.¹

This verse seems to suggest that the eclipse in question although apprehended to be total was not so at the place of the observer.

8. 'Then the Brahman (Atri), applying the stones together propitiating the gods with praise, and adoring them with reverence, placed the eye of Sūrya (sun) in the sky; he dissipated the delusions of Svarbhānu.'

Here Atri is alleged to have found out the instant of the end of the eclipse by counting stones together—a practice that was continued even up to the time of Pṛthūdaka² (864 A.D.). Atri's placing the 'eye of Sūrya' in the sky shows that the end of the eclipse was visible.

9. 'The sun, whom the *Asura* Svarbhānu, had enveloped (rather "struck") with darkness, the sons of Atri subsequently recovered, no others were able (to effect his release³).'

As to the day of the year on which this eclipse took place the *Kauṣītaki Brāhmaṇa* (XXIV, 3, 4) throws a clearer light:—

स्वर्भानुर्हसुरादित्यं तमसाविध्यत्तस्यात्रयस्तमोपजिघांसन्त एतं सप्त-
दशस्तोमं त्यहं पुरस्तादिधुवतउपायस्तस्य पुरस्तात्तमोपजङ्गस्तत् परस्ता-

¹ This is Wilson's translation (*vide* *R̥gveda Translation* by H. H. Wilson, Vol. 3, p. 219 of the Poona Edition). MM. Vidhuśekhara Śāstri is of opinion that the word 'Atri' should be deleted and that in place of 'fearful (darkness)' we should have simply 'fear'.

² Cf. Pṛthūdaka's Commentary on the *Khaṇḍakhādya* of Brahmagupta, edited by P. C. Sengupta, Calcutta University Press, page 16
अथ देशं परिज्ञातुमिच्छति किं रेखा पूर्वेषांपरेष वा । तदाभौष्टदेये स्फुटमङ्गमचितेन
मणयित्वा देशान्तरकर्मणा विना ततो निर्मलाधारगुटिका आरोप्य निरूपयेत् ।
i.e. Pṛthūdaka recommends that time for the beginning of the eclipse, should be found by counting beads.

³ MM. Vidhuśekhara Śāstri would like to put the phrase 'to do it' in place of 'to effect his release' in the above translation by Wilson. Cf. Keith's translation on the next page.

दसौददेतमेव त्वहमुपरिष्ठादिवृत्त उपायंस्तस्य परस्तात् तमोपजन्तस्य
 एवं विद्वांस एतं सप्तदशस्तोमं त्वहमुभयतो विषुवन्तमुपायन्त्युभाभ्यामेव
 ते लोकान् यजमानाः पाप्मानमपन्नते तान्वै खरसामान इत्याचक्षते
 एतैर्हवा अत्रयः आदित्यं तमसोपस्पृण्वत तद्यदपस्पृण्वत तस्मात् खर-
 सामानस्तदेतदृचाऽभ्युदितम् ।

यं वै सूर्यं स्वर्भानुस्तमसाविध्यदामुरः ।

अत्रयस्तमन्वविन्दमहान्येऽव्यग्रजुवन् ॥ इति ॥

Keith translates the passage as follows:—

‘Svarbhānu, an Asura, pierced with darkness the sun; the Atris were fain to smite away its darkness; they performed before the *viṣuvant*, this set of three days, with *saptadaśa* (= seventeen) *stomas*. They smote away the darkness in front of it, that settled behind; they performed the same three-day rite after the *viṣuvant*; they smote away the darkness behind it. Those who perform knowing thus, the three-day (rite) with *saptadaśa stoma* on both sides of the *viṣuvant*, verily those sacrificers smite away evil from both worlds. They call them the *svarasāmans*, by them the Atris rescued (*apaspr̥ṇvata*) the sun from the darkness; in that they rescued, therefore they are the *svarasāmans*. This is declared in a *ṛc*,

‘The Sun which Svarbhānu
 The Asura pierced with darkness,
 The Atris found it,
 None other could do so.’

We gather from this passage that the day on which the eclipse happened was a *viṣuvant* day. Now the word ‘*viṣuvant*’ according to the *Aitareya* and the *Kauṣītaki Brāhmaṇas*, meant the summer solstice day, as I have set forth elsewhere.¹ The arguments in favour of this meaning may be summarized thus:—

According to the *Aitareya Brāhmaṇa*, the *viṣuvant* and *Ekaviṃśa* day was the same day.² It was the day on which the gods raised up the sun to the highest point in the heavens, and that on this day the sun being held on either side by a period of *Virāj* (10 days), did not waver though he went over these worlds or the *viṣuvant* was the true summer solstice day.³ The *Kauṣītaki Brāhmaṇa* also says that the sun starting northward from the winter solstice on the new moon of Māgha, reached the *viṣuvant* after six months. Thus according to these two *Rgveda Brāhmaṇas*, the *viṣuvant* day meant the summer solstice day only.

¹ JRASBL, Vol. iv, 1938, pp. 415–18, and pp. 421–22.

² *Aitareya Brāhmaṇa*, 18, 18.

³ *Kauṣītaki Brāhmaṇa*, xix, 3.

In the days of the *Taittiriya Samhitā* and the *Tāṇḍya*¹ *Brāhmaṇa* (2449 B.C.), the word 'viṣuvant' came to mean the middle day of the sacrificial year begun from spring, i.e. it became the day on which the sun's longitude became 150°, or the day of the beginning of Indian autumn.

Finally, the same word 'viṣuvant' came to mean about the time (1400 B.C.) of the *Vedaṅgas*,² the vernal or the autumnal equinox day.

Hence in interpreting a *Rgveda* reference we should take the word 'viṣuvant' as the summer solstice day only, as this is the meaning of it given by the *Rgveda Brāhmaṇas*.

Another point that needs be clarified in this connection is to try to get at the rough time of Atri and the place of his observation of this eclipse. We shall use the *Rgveda* references relating to Atri. Some of these are cited below to show where and when Atri lived.

- (a) I, 51, 3,³ addressed to Indra—'Thou hast shown the way to Atri, who vexes his adversaries by a hundred doors'.
- (b) I, 112, 7,⁴ addressed to the Aśvins—'You rendered the scorching heat pleasurable to Atri'.
- (c) I, 119, 6,⁵ addressed to the Aśvins—'You quenched with snow (*himena*) for Atri, the scorching heat'.
- (d) I, 116, 8,⁶ addressed to the Aśvins—'You quenched with cold (*himena*), the blazing flames (that encompassed Atri), and supplied him with food supported strength; you extricated him, Aśvins from the dark cavern into which he had been thrown headlong, and restored him to every kind of welfare'.
- (e) I, 139, 9,⁷ addressed by Paruccheṣa to Agni, showing the high antiquity in which Atri lived—'The ancient Dadhyañc, Aṅgiras, Priyamedha, Kanva, Atri, Manu have known my birth'.

¹ *Taittiriya Samhitā*, VII, 4, 8, also *Tāṇḍya Brāhmaṇa*, V, 9; for exposition see JRASBL, Vol. iv, 1938, pp. 425-36.

² Yājusa Jyautiṣam, 23.

³ अपोताचये शतदुरेषु गातुवित् ।

⁴ तप्तं चर्ममोम्यामवन्तमचये ।

⁵ हिमेन चर्मं परितप्तमचये ।

⁶ हिमेनाग्निं त्रं समवारयेथां पितुमतीर्जमस्मादचधत् ।

अबौधे अचिमचिनावनौतमुग्निन्यथुः सर्वगणं खलि ॥

⁷ दध्यङ् हिमे अनुषं पूर्वोऽचित्रिः प्रियमेधः कण्डोऽचिर्मनुर्विदुस्ते पूर्वो मनुर्विदुः ।

- (f) I, 181, 4,¹ addressed to the Ásvins—'You rendered the heat as soothing as sweet butter to Atri'.
 (g) V, 73, 6-7,² addressed to the Ásvins—'Leaders (of rites) Atri recognized (your benevolence) with a grateful mind on account of the relief you afforded him, when, Nāsatyas through his praise of you, he found the fiery heat innocuous'. 'Atri was rescued by your acts.'

From these quotations it would appear that Atri took shelter in a cave with a hundred doors or openings. There he felt scorching heat which was allayed by a thaw of ice from the snow-capped top of the mountain peak, at the bottom of which this cave was situated. From quotation (e), we gather that Atri was a contemporary of Dadhyañc, Angiras, Priyamedha, Kanva and Manu and was probably one of the first batch of the Aryans to pour into the Punjab.

The favour of the Ásvins which Atri is alleged to have received was in the form of a thaw of ice, which happened at the time perhaps of the rising of α *Arietis* in the east at the end of the evening twilight. For this astronomical event at about 4000 B.C., at the latitude of Kurukṣetra, the sun's longitude comes out to have been $97^{\circ} 54'$, which was correct about 8 days after the summer solstice. This time or the part of the year was quite favourable for the thaw of the Himalayan ice.

We may thus conclude that Atri lived about 4000 B.C., in a cave of a hundred openings at the bottom of a snow-capped peak either of the Himalayas or of the Karakoram range and the eclipse of the sun spoken of in the hymn attributed to Atri, happened on the *viṣuvant* day, i.e. on the summer solstice day either correctly ascertained or estimated, and in the fourth part of the day of the meridian of Kurukṣetra. Now the *viṣuvant* or the summer solstice day, if estimated, might mean actually the day following it. For example, if the sun was determined to have reached the winter solstice on the 13th day, say of lunar Māgha then according to the vedic lunisolar calculations, in $1\frac{1}{2}$ years there would be 18 lunations and 17 days.³ This period

¹ युवं च घर्मे मधुमन्मसचये पीनशीतो वृषीत मेधे ।

² युवीरचिचिकेतति नरासुखेन चेतसा ।

घर्मे यद्वासरेपसं नासत्यास्त्राभुरण्यति ॥

* * * * *

यद्वां दशोभिरक्षिनाचिर्नरावर्षेति ॥

³ Cf. 'Seventeen stomas' in the *Kauṣītaki Brāhmaṇa*, xxiv, 3, 4, *loc. cit.*; compare also the *Āitareya Brāhmaṇa*, xviii, 18, where the three *stomas* before the *viṣuvant* are said to become seventeen *stomas* in connection with the *Svarasāman* days.

would comprise 548.6 days while $1\frac{1}{2}$ tropical years = 548 days, the estimated summer solstice day according to the Vedic rule would come about 0.6 day after the true summer solstice. In practice the estimated summer solstice day would generally fall one day after the true solstice day in $1\frac{1}{2}$ years.

The solar eclipse of which we want to find the date, from the above considerations must have satisfied the following conditions:—

- (i) It must have happened on the true summer solstice day or on the day following, and no other date is acceptable.
- (ii) It must have happened or rather ended in the fourth part of the day for the meridian of Kurukṣetra.
- (iii) It must have been a central solar eclipse.
- (iv) It must have been observed from a cave at the foot of a snow capped peak either of the Himalayas or of the Karakoram range.
- (v) That at the place of Atri, the eclipse did not reach the totality.
- (vi) It must have happened between 4000 B.C. to 2400 B.C. neither earlier nor later, when the word *viṣvavnt* had its oldest meaning, viz., the summer solstice day.

We now proceed to determine the central solar eclipse which must satisfy all the conditions enumerated above. For starting our calculations we get at a central solar eclipse happening on the 21st July, 3146 B.C. The suggestion for it came from the *Kauṣītaki Brāhmaṇa*, which says that the sun turned north on the new moon of Māgha. This Māgha was not an ordinary month of Māgha as it comes every year, but it was the Vedic standard month of Māgha which came in our time in the years 1924, 1927, 1932 and 1935, as has been shown in another place.¹ I tried the months of lunar Māgha of the years 1924, 1932 and 1935, but these did not lead to a central solar eclipse on the summer solstice day or on the day following it. The Vedic month of Māgha as it came in 1927 A.D., however, did yield the central solar eclipse on the 21st July, 3146 B.C. in the following way:—

In the year 1927 A.D., the Vedic standard month of Māgha lasted from Feb. 2 to March 3. Full 31 lunations after this last date (i.e. March 3, 1927) came the 3rd of September, 1929, on which day the new moon happened at about Greenwich Mean Noon. Now on the 3rd September, 1929, the Sun's mean longitude from Newcomb's equation comes out to have been $162^{\circ} 8' 33''$. Ignoring the sun's equation, I assumed as a first step that this longitude was 90° in the year we want to determine. This shows a total shifting of the solstices by $72^{\circ} 8' 33''$, representing

¹ JRASBL, Vol. iv, 1938, p. 421.

a lapse of 5227 years till 1929. From which we get that the longitude of the sun's apogee was $= 12^{\circ} 36' 48''$ at 51.98 centuries before 1900 A.D. The eccentricity of the sun's orbit was $= .01858$ nearly. Hence the sun's equation for the mean longitude of 90° was $= -2^{\circ} 5' 9''$ nearly. This equation is applied to the mean longitude of the sun at G.M.N. on the 3rd September, 1929, viz., $162^{\circ} 8' 33''$. The result $160^{\circ} 3'$ for 1929 A.D. was $= 90^{\circ}$ in the year we want to determine. This gives a total shifting of the solstices up to 1929 A.D. to be $= 70^{\circ} 3'$ indicating a lapse of 5074 years. Now since—

$5074 = 1939 \times 2 + 160 \times 7 + 19 \times 4$, and as 1939, 160 and 19 years represent lunisolar cycles in sidereal years, it may be inferred that the number of elapsed years till 1929 A.D. does not require any change to make the year arrived at similar to 1929 A.D.

$$\begin{aligned}\text{Now } 5074 \text{ sidereal years} &= 1853311 \text{ days} \\ &= 5074 \text{ Julian years} + 32.5 \text{ days.}\end{aligned}$$

Hence the Julian date arrived at is, -3145 A.D., July 20, or 3146 B.C., July 20.

Now the lunisolar mean places on:—

1	2
July 20, 3146 B.C., G.M.N.	July 21, 3146 B.C., G.M.N.
Mean Sun $= 91^{\circ} 51' 48''.42$,	Mean Sun $= 92^{\circ} 50' 56''.75$,
„ Moon $= 80^{\circ} 1' 41''.45$,	„ Moon $= 93^{\circ} 12' 16''.45$,
A. Node $= 270^{\circ} 21' 25''.00$,	D. Node $= 90^{\circ} 18' 14''.37$,
L. Perigee $= 250^{\circ} 39' 1''.02$.	L. Perigee $= 250^{\circ} 45' 42''.07$.

(The lunisolar mean places have been calculated back from the equations given by Newcomb and Brown, which have been taken as correct in the present paper, from 4500 B.C. up to the modern times.)

The figures in column (2) show that on the 21st July, 3146 B.C., there was an annular eclipse of the sun, but this was not visible from the Northern Punjab, and could not be accepted as giving us Atri's time. This eclipse, however, took place (1) on the day following the summer solstice and (2) in the fourth part of the day on the meridian of Kuruksetra. We take this eclipse as the starting point for further calculations.¹ We find that:—

$$\begin{aligned}\text{The mean tropical year} & \\ \text{at 3146 B.C.} &= 365.2425085 \text{ da.} \\ \text{The mean synodic month} & \\ \text{at this epoch} &= 29.5305988 \text{ da.}\end{aligned}$$

¹ There is another possible method for getting at a central solar eclipse (within the range 4000 B.C. to 2400 B.C.) on the S.S. day which is detailed in the note added to this paper as Appendix III.

The mean motion of the moon's node at this epoch	= 69636".6596 per tropical year.
Tropical revolution of the node at this epoch	= 18.61127 tropical yrs.
Tropical revolution of the Perigee at this epoch	= 8.84527 tropical yrs.

In our calculation both backward or forward from this epoch, we cannot use the Chaldean *Saros*, as it does not contain an exact number of tropical years. We want to find only those central eclipses of the sun which happened on the same day of the tropical year, and proceed to find the cycles suitable to our problem.

Now,

$$(a) \frac{\text{Tropical year}}{\text{Synodic month}} = 12 + \frac{1}{2} + \frac{1}{1} + \frac{1}{2} + \frac{1}{1} + \frac{1}{1} + \frac{1}{18} \dots$$

$$\text{The convergents are: } \frac{12}{1}, \frac{25}{2}, \frac{37}{3}, \frac{99}{8}, \frac{136}{11}, \frac{235}{19}, \frac{4366}{353} \dots$$

Here the most important lunisolar cycles are, in tropical years, 8, 11, 19 and 353 containing lunations of 99, 136, 235 and 4366 respectively.

(b) Similarly the convergents to the tropical half-revolutions of the node in tropical years are given by,

$$9.305635 = 9 + \frac{1}{3} + \frac{1}{3} + \frac{1}{1} + \frac{1}{2} + \frac{1}{9} \dots$$

$$\text{The convergents are: } \frac{9}{1}, \frac{28}{3}, \frac{93}{10}, \frac{121}{13}, \frac{335}{36} \dots$$

We now readily get the following eclipse cycles:

- (1) 456 years = (335 + 121) yrs. = $24\frac{1}{2}$ revols. of Node,
 = (353 + $19 \times 5 + 8$) yrs. = 5640 lunations nearly.

Here 456 years = 166551 days and

5640 lunations = 166552.6 days = $24\frac{1}{2}$ revols. + 28' motion of Node,

= 51 revols. + 199° motion of Perigee.

- (2) 391 years = (335 + 2×28) yrs. = 21 revols. of Node nearly.

= (353 + 19×2) yrs. = 4836 lunations very nearly.

Here 391 years = 142810 days = 4836 lunations.

= 21 revols. + 3° 10' motion of Node = 44 revols. + 73° 33' motion of Perigee.

$$\begin{aligned}
 (3) \text{ 763 years} &= (335 \times 2 + 93) \text{ yrs.} = 41 \text{ revols. of the Node} \\
 &\quad \text{nearly.} \\
 &= (353 \times 2 + 19 \times 3) \text{ yrs.} = 9437 \text{ lunations} \\
 &\quad \text{very nearly.}
 \end{aligned}$$

$$\begin{aligned}
 \text{Here 763 years} &= 278680 \text{ days} = 9437 \text{ lunations very nearly,} \\
 &= 41 \text{ revols.} - 1^\circ 11' \text{ motion of Node} = 86 \\
 &\quad \text{revols.} + 93^\circ 32' \text{ motion of Perigee.}
 \end{aligned}$$

From these three fundamental cycles we get some other auxiliary cycles as detailed below:—

$$\begin{aligned}
 (4) \text{ 372 tropical years} &= \begin{cases} 4601 \text{ lunations,} \\ 20 \text{ revols.} - 4^\circ 21' \text{ of motion of Node,} \\ 42 \text{ revols.} + 20^\circ \text{ of motion of Lunar} \\ \quad \text{Perigee,} \\ 135870 \text{ days.} \end{cases} \\
 (5) \text{ 19 tropical years} &= \begin{cases} 235 \text{ lunations,} \\ 1 \text{ revol.} + 7^\circ 31' \text{ motion of Node,} \\ 2 \text{ revols.} + 53^\circ 22' \text{ motion of Lunar} \\ \quad \text{Perigee,} \\ 6940 \text{ days nearly.} \end{cases} \\
 (6) \text{ 65 tropical years} &= \begin{cases} 804 \text{ lunations} - 1.6 \text{ days,} \\ 3\frac{1}{2} \text{ revols.} - 2^\circ 39' \text{ motion of Node,} \\ 7 \text{ revols.} + 125^\circ 30' \text{ motion of Lunar} \\ \quad \text{Perigee,} \\ 23741 \text{ days.} \end{cases}
 \end{aligned}$$

With the help of these cycles as a first step, I could find 19 central eclipses of the sun near the summer solstice day extending from 4319 B.C. to 2234 B.C. I could then collect from them 10 central eclipses of the sun happening either on the summer solstice day or on the day following as exhibited in Table I, Appendix I, all of which happened near the descending node. I then worked out 12 central solar eclipses near the ascending node which also happened near the summer solstice day as exhibited in Table II, Appendix I. Of all these 22 central solar eclipses near the summer solstice day, the one that happened on the 26th of July, 3928 B.C. alone meets all the conditions set forth before.

In connection with examination of the Tables I and II and other possible central solar eclipses that may be found in the period from 4319 B.C., it is worthy of note that one of the essential conditions for a central solar eclipse on the summer solstice day to be visible in the Northern Punjab, is that the ascending node should have a longitude of about 85° and the descending node of about 95° .

I myself and my assistant Mr. Nirmal Chandra Lahiri, M.A., are satisfied that no other central solar eclipse than that which happened on the 26th July, 3928 B.C. meets all the necessary conditions under which the solar eclipse described in the *Rgveda*

happened, the range under purview being from 4319 to 2234 B.C. According to our finding therefore, *the solar eclipse of the 26th July, 3928 B.C., represents a unique solution of the R̥gveda reference.*

The circumstances of the eclipse for the meridian of Kurukṣetra and for the latitudes of $33\frac{1}{2}^{\circ}$ and $35\frac{1}{2}^{\circ}$ north respectively have been calculated by my collaborator Mr. Lahiri under my supervision. He has, I trust, done this part of the work correctly on methods which had my approval. The chief features are summarized below while the entire work is exhibited in Appendix II.

Solar Eclipse, July 26th, 3928 B.C.

A.

Meridian of Kurukṣetra and north latitude $33\frac{1}{2}^{\circ}$.

(I) Beginning of the eclipse	..	3-17 P.M.	Kurukṣetra M.T.
(II) Time of nearest approach of the centres	..	4-19 P.M.	„ „
(III) End of eclipse	..	5-19 P.M.	„ „
(IV) Magnitude of the eclipse	..	0-735	
(V) Instant of New Moon	..	2-58 P.M.	„ „
(VI) Sun's longitude at New Moon		$90^{\circ} 16'$ nearly.	

B.

Meridian of Kurukṣetra and north latitude $35\frac{1}{2}^{\circ}$.

(I) Beginning of the eclipse	..	3-13 P.M.	Kurukṣetra M.T.
(II) Nearest approach of centres		4-18 P.M.	„ „
(III) End of the eclipse	..	5-17 P.M.	„ „
(IV) Magnitude of the eclipse	..	0-792	

This eclipse thus takes place on the summer solstice day after 3 P.M. and lasts for about 2 hrs., and finishes in the last quarter of the day. Although it was a total eclipse of the sun, at the place of the observer the totality apprehended was not reached by it. From this 'disaster' the sun was 'saved' by Atri as the *R̥gveda* text says.

As to Prof. Ludwig's paper, I have not had access to it yet, but from what I could gather of it from Whitney's criticism in JAOS for 1855, he interpreted the word *viṣuvant* as an equinoctial day which is here unjustifiable. The *Kauṣītaki* and the *Aitareya Brāhmaṇas* do not take it in that sense, as has been pointed out before. These *Brāhmaṇas* interpret the word as 'the summer solstice day' and nothing else. Hence as Ludwig was wrong in his interpretation, Oppolzer, who began his calculation of eclipses from 1200 B.C. downward thought that either of the dates

1001 B.C. and 1029 B.C. would meet the *Rgvedic* conditions. Oppolzer's findings may be summarized as:—

- (a) October 2, 1001 B.C. The solar eclipse was annular. Time of N.M. of the eclipse was 4 hrs. 44·8 min. and the longitude of the sun was $179^{\circ}59'28''$. Hence according to Oppolzer's calculation the day was of autumnal equinox.
- (b) October 11, 1029 B.C. Time of N.M. of the eclipse was 23 hrs. 44·9 min. and the longitude of the sun was $189^{\circ}28'$. This eclipse was not completely visible in India and did not happen even on the autumnal equinox day.

Oppolzer based his finding on a wrong interpretation of the word *visuvant* as given by Ludwig and it is thus quite untenable.

Oppolzer again for his calculations had to depend on Leverrier's equations for the sun's elements and Hansen's equations for those of the moon. On October 12, 1001 B.C. at G.M.N. the mean lunisolar elements were:—

Mean Sun	= $181^{\circ}31'6''\cdot65$,
Mean Moon	= $177^{\circ}37'41''\cdot19$,
A. Node	= $175^{\circ}44'34''\cdot30$,
Lunar Perigee	= $76^{\circ}13'35''\cdot68$,

as deduced from the latest equations. The new moon happened about 5 hours before, i.e. at 7 hrs. G.M.T. or 12·8 noon of Kuruksetra mean time. It seems that the beginning, middle and the end of the eclipse cannot be correctly obtained from Hansen's equations. In the present case our finding of the N.M. and that of Oppolzer are different.

As has been said before, Lanman has pointed out a parallelism of the description of the solar eclipse in the *Rgveda* and that in the *Samyukta Nikāya*. But we are unable to attach any importance to any suggestion therefrom of any synchronism of the two events. It can have no chronological value. What is found in the *Samyukta Nikāya* may be a mere imitation of what is contained in the *Brāhmaṇas*.

The time of the solar eclipse spoken of in the *Rgveda* is thus obtained as July 26 of 3928 B.C. This date at once settles the time of Atri, the observer of this eclipse. In our finding this Atri was one of the first batch of the Aryans who tried and succeeded in settling in the Northern Punjab. As shown before he took shelter in a cave at the foot of a snow-capped peak either of the Himalayas or of the Karakoram range. In my papers¹ on '*Madhu-Vidyā*' and 'When Indra became Maghavan' the dates arrived at were 3995 B.C. and 4170 B.C. and are liable to being lowered to about 3900 B.C. as these dates depended on a change

¹ JRASBL, Vol. iv, 1938, No. 3.

in the celestial longitudes of stars due to the precession of equinoxes. The date herein arrived at by a unique determination of a central solar eclipse is not liable to any such change, if as in the present case, the most up to date equations for the elements of the sun and the moon given by Newcomb and Brown be assumed as correct for all times past, present or future. We thus arrive at this definite conclusion that the Aryan colonization of India began about 3900 B.C. If this last finding be called into question the name of Atri should be traceable in the past traditions of the Parsis and the ancient Greeks and also of the 'Elder race' of Aratos and Eudoxus.

Finally, I hope that attention of the astronomers, chronologists and orientlists all the world over, will be drawn to this finding of the date of the solar eclipse as described in the *Rigveda*.

APPENDIX I—TABLE I.

Interval.	Julian date.	Mean elements at G.M. Noon.	REMARKS.
19 yrs.	4319 B.C. July 29	Mean Sun = $92^{\circ} 21' 38''.88$ " Moon = $91^{\circ} 57' 42''.79$ D. Node = $99^{\circ} 50' 55''.98$ Perigee = $29^{\circ} 40' 21''.44$	N.M. 13 hrs. before G.M.N. Node unfavourable.
372 yrs.	4300 B.C. July 29	Mean Sun = $92^{\circ} 44' 46''.51$ " Moon = $96^{\circ} 6' 45''.19$ D. Node = $92^{\circ} 18' 16''.33$ Perigee = $83^{\circ} 3' 38''.47$	N.M. 14 hrs. before G.M.N.
19 yrs.	3928 B.C. July 26	Mean Sun = $92^{\circ} 30' 50''.92$ " Moon = $92^{\circ} 19' 31''.20$ D. Node = $96^{\circ} 36' 55''.35$ Perigee = $103^{\circ} 37' 10''.50$	
372 yrs.	3909 B.C. July 26	Mean Sun = $92^{\circ} 53' 59''.86$ " Moon = $96^{\circ} 28' 42''.40$ D. Node = $89^{\circ} 4' 24''.65$ Perigee = $155^{\circ} 18' 4''.87$	Not visible in upper India.
372 yrs.	3537 B.C. July 23	Mean Sun = $92^{\circ} 40' 37''.37$ " Moon = $92^{\circ} 44' 21''.45$ D. Node = $93^{\circ} 26' 0''.00$ Perigee = $175^{\circ} 30' 44''.28$	New Moon 8 hrs. after G.M.N.
19 yrs.	3165 B.C. July 20	Mean Sun = $92^{\circ} 27' 44''.65$ " Moon = $89^{\circ} 2' 47''.65$ D. Node = $97^{\circ} 50' 27''.48$ Perigee = $198^{\circ} 26' 16''.72$	New Moon about 12 hrs. after G.M.N.
372 yrs.	3146 B.C. July 21	Mean Sun = $92^{\circ} 50' 56''.75$ " Moon = $93^{\circ} 12' 16''.46$ D. Node = $90^{\circ} 18' 14''.87$ Perigee = $250^{\circ} 45' 42''.07$	Not visible in Northern India.
372 yrs.	2774 B.C. July 18	Mean Sun = $92^{\circ} 38' 35''.56$ " Moon = $89^{\circ} 33' 40''.15$ D. Node = $94^{\circ} 45' 43''.88$ Perigee = $269^{\circ} 31' 23''.82$	New Moon two hours after G.M.N.
19 yrs.	2402 B.C. July 15	Mean Sun = $92^{\circ} 26' 44''.54$ " Moon = $85^{\circ} 57' 55''.39$ D. Node = $99^{\circ} 16' 9''.33$ Perigee = $290^{\circ} 16' 30''.04$	New Moon 9 hrs. later.
	2383 B.C. July 15	Mean Sun = $92^{\circ} 49' 59''.88$ " Moon = $90^{\circ} 7' 41''.78$ D. Node = $91^{\circ} 44' 15''.03$ Perigee = $343^{\circ} 24' 29''.58$	N.M. 8 hrs. before G.M.N. and not in the proper part of the day.

APPENDIX I—TABLE II.

Interval.	Julian date.	Mean elements at G.M. Noon.	REMARKS.
372 yrs.	4607 B.C. Aug. 2	Mean Sun = $94^{\circ} 11' 58''.93$ " Moon = $93^{\circ} 48' 11''.41$ A. Node = $90^{\circ} 38' 58''.36$ Perigee = $187^{\circ} 57' 15''.92$	2 days after S.S.
372 yrs.	4235 B.C. July 30	Mean Sun = $93^{\circ} 57' 38''.79$ " Moon = $89^{\circ} 58' 43''.54$ A. Node = $94^{\circ} 55' 21''.50$ Perigee = $209^{\circ} 27' 48''.49$	N.M. 12 hrs. later. Not visible in N. India.
19 yrs.	3863 B.C. July 27	Mean Sun = $93^{\circ} 43' 49''.19$ " Moon = $86^{\circ} 11' 58''.11$ A. Node = $99^{\circ} 14' 29''.00$ Perigee = $229^{\circ} 11' 14''.02$	Not visible in N. India. N.M. 17 hrs. later. 2 days after S.S.
19 yrs.	3844 B.C. July 27	Mean Sun = $94^{\circ} 6' 59''.19$ " Moon = $90^{\circ} 21' 10''.78$ A. Node = $91^{\circ} 41' 59''.82$ Perigee = $282^{\circ} 37' 3''.92$	2 days after S.S.
353 yrs.	3825 B.C. July 26	Mean Sun = $93^{\circ} 31' 0''.23$ " Moon = $81^{\circ} 19' 48''.77$ A. Node = $84^{\circ} 12' 41''.63$ Perigee = $336^{\circ} 2' 7''.09$	N.M. about $2\frac{1}{2}$ hrs. later. Eclipse not finished before sunset.
19 yrs.	3472 B.C. July 24	Mean Sun = $93^{\circ} 53' 41''.69$ " Moon = $86^{\circ} 37' 18''.98$ A. Node = $96^{\circ} 4' 4''.48$ Perigee = $302^{\circ} 55' 36''.26$	N.M. about $4\frac{1}{2}$ hrs. later.
353 yrs.	3453 B.C. July 24	Mean Sun = $94^{\circ} 16' 52''.37$ " Moon = $90^{\circ} 46' 38''.11$ A. Node = $88^{\circ} 31' 44''.40$ Perigee = $356^{\circ} 15' 57''.77$	2 days after S.S.
19 yrs.	3100 B.C. July 21	Mean Sun = $93^{\circ} 40' 53''.98$ " Moon = $82^{\circ} 56' 13''.45$ A. Node = $100^{\circ} 29' 2''.49$ Perigee = $323^{\circ} 2' 6''.52$	N.M. 9 hrs. later.
372 yrs.	3081 B.C. July 21	Mean Sun = $94^{\circ} 4' 6''.32$ " Moon = $87^{\circ} 5' 44''.65$ A. Node = $92^{\circ} 56' 51''.25$ Perigee = $16^{\circ} 19' 46''.72$	2 days after S.S.
19 yrs.	2709 B.C. July 18	Mean Sun = $93^{\circ} 51' 50''.72$ " Moon = $83^{\circ} 28' 37''.25$ A. Node = $97^{\circ} 24' 50''.57$ Perigee = $36^{\circ} 11' 31''.18$	N.M. about 9 hrs. later.
372 yrs.	2690 B.C. July 19	Mean Sun = $94^{\circ} 15' 34''.50$ " Moon = $87^{\circ} 38' 17''.37$ A. Node = $89^{\circ} 52' 49''.10$ Perigee = $88^{\circ} 28' 23''.32$	2 days after S.S.
	2318 B.C. July 16	Mean Sun = $94^{\circ} 3' 50''.17$ " Moon = $84^{\circ} 2' 11''.59$ A. Node = $94^{\circ} 23' 54''.42$ Perigee = $108^{\circ} 3' 24''.72$	2 days after S.S.

APPENDIX II.

Calculation of the Solar Eclipse on July 26, 3928 B.C.

Julian days = 286928

Julian days on 1st Jan., 1900 = 2415021

Hence the epoch is 2,128,093 days before 1st Jan., 1900, of 12 hr. Greenwich mean midday, i.e. 58.26 Julian centuries + 146.5 days earlier.

Lunisolar elements at G.M. Noon on July 26, 3928 B.C.

Let A represent the epoch 8 A.M. (G.M.T.) i.e. 1.8 P.M. Kuruksetra time.
 " B " " " 10 A.M. " " 3.8 P.M. " "
 " C " " " 12 Noon " " 5.8 P.M. " "

Mean Sun.

A = $92^{\circ} 20' 59''.54$
 B = $92^{\circ} 25' 55''.23$
 C = $92^{\circ} 30' 50''.92$

Mean Moon.

A = $90^{\circ} 7' 45''.36$
 B = $91^{\circ} 13' 38''.28$
 C = $92^{\circ} 19' 31''.20$

D. Node.

A = $96^{\circ} 37' 27''.11$
 B = $96^{\circ} 37' 11''.23$
 C = $96^{\circ} 36' 55''.35$

Moon's Perigee.

A = $103^{\circ} 36' 3''.66$
 B = $103^{\circ} 36' 37''.08$
 C = $103^{\circ} 37' 10''.50$

Sun's apogee = $1^{\circ} 55' 57''.37$
 " eccentricity (e) = 0.018759
 " (2e) in radians = $128'.977 [2.1105136]$
 " ($\frac{2}{3}e^2$) " = $1'.512 [0.1796033]$

LONGITUDE OF SUN.

	A	B	C
Mean Sun	= $92^{\circ} 21' 0''$	$92^{\circ} 25' 55''$	$92^{\circ} 30' 51''$
Sun's apogee	= $1^{\circ} 55' 57''$	$1^{\circ} 55' 57''$	$1^{\circ} 55' 57''$

g = Sun's anomaly (Indian)	= $90^{\circ} 25' 3''$	$90^{\circ} 29' 58''$	$90^{\circ} 34' 54''$
$-128'.977 \sin g$	= $-2^{\circ} 8' 58''$	$-2^{\circ} 8' 58''$	$-2^{\circ} 8' 58''$
$+1'.512 \sin 2g$	= $-1''$	$-2''$	$-2''$

Apparent Sun	= $90^{\circ} 12' 1''$	$90^{\circ} 16' 55''$	$90^{\circ} 21' 51''$
Hourly motion	= $+2' 27''.5$		

LONGITUDE OF MOON.

	A	B	C
Mean Arguments:—			
l = Moon's anomaly	= $346^{\circ} 31' 42''$	$347^{\circ} 37' 1''$	$348^{\circ} 42' 21''$
$2l$	= $333^{\circ} 3' 23''$	$335^{\circ} 14' 2''$	$337^{\circ} 24' 42''$
D = Moon—Sun	= $357^{\circ} 46' 46''$	$358^{\circ} 47' 43''$	$359^{\circ} 48' 40''$
$2D$	= $355^{\circ} 33' 32''$	$357^{\circ} 35' 26''$	$359^{\circ} 37' 20''$
$4D$	= $351^{\circ} 7' 4''$	$355^{\circ} 10' 52''$	$359^{\circ} 14' 40''$
l' = Sun's anomaly	= $270^{\circ} 25' 3''$	$270^{\circ} 29' 58''$	$270^{\circ} 34' 54''$
F = Moon—Node	= $173^{\circ} 30' 18''$	$174^{\circ} 36' 27''$	$175^{\circ} 42' 36''$
$2F$	= $347^{\circ} 0' 36''$	$349^{\circ} 12' 54''$	$351^{\circ} 25' 12''$
$2D-l$	= $9^{\circ} 1' 50''$	$9^{\circ} 58' 25''$	$10^{\circ} 54' 59''$
$2D-2l$	= $22^{\circ} 30' 8''$	$22^{\circ} 21' 24''$	$22^{\circ} 12' 39''$
$2D-l-l'$	= $98^{\circ} 36' 47''$	$99^{\circ} 28' 26''$	$100^{\circ} 20' 5''$
$2D+l$	= $342^{\circ} 5' 14''$	$345^{\circ} 12' 27''$	$348^{\circ} 19' 40''$
$2D-l'$	= $85^{\circ} 8' 29''$	$87^{\circ} 5' 28''$	$89^{\circ} 2' 27''$
$l-l'$	= $76^{\circ} 6' 39''$	$77^{\circ} 7' 3''$	$78^{\circ} 7' 27''$
$l+l'$	= $256^{\circ} 56' 45''$	$258^{\circ} 7' 0''$	$259^{\circ} 17' 15''$
$2F-l$	= $0^{\circ} 28' 54''$	$1^{\circ} 35' 53''$	$2^{\circ} 42' 52''$
$2D-2F$	= $8^{\circ} 32' 56''$	$8^{\circ} 22' 32''$	$8^{\circ} 12' 8''$
$4D-l$	= $4^{\circ} 35' 22''$	$7^{\circ} 33' 51''$	$10^{\circ} 32' 20''$

Moon's equations (to be applied to the mean longitude of moon.)

	A	B	C
+22640" sin l	= -5274".3	-4855".0	-4434".0
+769" sin $2l$	= -348".4	-322".1	-295".4
+4586" sin $(2D-l)$	= +719".8	+794".3	+868".5
-125" sin D	= +4".8	+2".6	+0".4
+2370" sin $2D$	= -183".5	-99".6	-15".6
-669" sin l'	= +669".0	+669".0	+669".0
+212" sin $(2D-2l)$	= +81".1	+80".6	+80".1
+206" sin $(2D-l-l')$	= +203".7	+203".2	+202".7
+192" sin $(2D+l)$	= -59".1	-49".0	-38".8
+165" sin $(2D-l')$	= +164".4	+164".8	+165".0
+148" sin $(l-l')$	= +143".7	+144".3	+144".8
-110" sin $(l+l')$	= +107".2	+107".7	+108".1
-85" sin $(2F-l)$	= -0".7	-2".4	-4".0
+59" sin $(2D-2F)$	= +8".8	+8".6	+8".4
+39" sin $(4D-l)$	= +3".1	+5".1	+7".1
Total -ves	= -5866".0	-5328".1	-4787".8
„ +ves	= +2105".6	+2180".2	+2254".1
Total inequalities	= -3760".4	-3147".9	-2533".7
	= -1° 2' 40".4	-0° 52' 27".9	-0° 42' 13".7
Mean Moon	= 90° 7' 45".4	91° 13' 38".3	92° 19' 31".2
∴ True Moon on orbit	= 89° 5' 5".0	90° 21' 10".4	91° 37' 17".5
Ascending Node	= 276° 37' 27".1	276° 37' 11".2	276° 36' 55".4
$F_1 = M - \Omega$	= 172° 27' 37".9	173° 43' 59".2	175° 0' 22".1
$2F_1$	= 344° 55' 15".8	347° 27' 58".4	350° 0' 44".2
-417" sin $2F_1$	= +0° 1' 48".5	+0° 1' 30".5	+0° 1' 12".3
Moon on orbit	= 89° 5' 5".0	90° 21' 10".4	91° 37' 17".5
Apparent Moon	= 89° 6' 53".5	90° 22' 40".9	91° 38' 29".8
Average hourly motion	= +0° 37' 54".1		

Instant of conjunction is 9.8 mins. before B, i.e. at 9h 50m A.M. G.M.T. or 2h 58m P.M. Kuruksetra time.

Arguments for Latitude of Moon.

	A	B	C
F_1	= 172° 27' 38"	173° 43' 59"	175° 0' 22"
$2D-2F$	= 8° 32' 56"	8° 22' 32"	8° 12' 8"
$F_1+2D-2F$	= 181° 0' 34"	182° 6' 31"	183° 12' 30"
l'	= 270° 25' 3"	270° 29' 58"	270° 34' 54"
F_1-l'	= 262° 2' 35"	263° 14' 1"	264° 25' 28"
F_1+l'	= 82° 52' 41"	84° 13' 57"	85° 35' 16"
l	= 346° 31' 42"	347° 37' 1"	348° 42' 21"
F_1-l	= 185° 55' 56"	186° 6' 58"	186° 18' 1"
F_1-2l	= 199° 24' 14"	198° 29' 57"	197° 35' 40"
$F_1+2D-2F-l'$	= 270° 35' 31"	271° 36' 33"	272° 37' 36"
$F_1+2D-2F+l'$	= 91° 25' 37"	92° 36' 29"	93° 47' 24"
$F_1+2D-2F-l$	= 194° 28' 52"	194° 29' 30"	194° 30' 9"

LATITUDE OF MOON.

	A	B	C
+18518".5 sin F_1 =	+2429".7	+2021".5	+1612".0
+528.3 sin ($F_1 + 2D - 2F$) =	-9".3	-19".4	-29".6
-25.0 sin ($F_1 - l'$) =	+24".7	+24".8	+24".9
+23.8 sin ($F_1 + l'$) =	+23".6	+23".7	+23".7
+23.2 sin ($F_1 - l$) =	-2".4	-2".5	-2".6
-23.6 sin ($F_1 - 2l$) =	+7".8	+7".5	+7".1
+22.1 sin ($F_1 + 2D - 2F - l'$) =	-22".1	-22".1	-22".1
-10.4 sin ($F_1 + 2D - 2F + l'$) =	-10".4	-10".4	-10".4
-15.4 sin ($F_1 + 2D - 2F - l$) =	+3".9	+3".9	+3".9
Total +ves =	+2489".7	+2081".4	+1671".6
" -ves =	-44".2	-54".4	-64".7
Total =	+2445".5	+2027".0	+1606".9
∴ Latitude =	+40' 45".5	+33' 47".0	+26' 46".9
Average hourly variation =	-3' 29".6.		

Horizontal parallax.

$$P = 3422".7 + 186".6 \cos l + 10".2 \cos 2l + 34".3 \cos (2D - l) \\ + 28".3 \cos 2D + 3".1 \cos (2D + l)$$

B

$$\begin{aligned} +186".6 \cos l &= +182".3 \\ +10".2 \cos 2l &= +9".3 \\ +34".3 \cos (2D - l) &= +33".8 \\ +28".3 \cos 2D &= +28".3 \\ +3".1 \cos (2D + l) &= +3".0 \\ \text{Constant} &= 3422".7 \end{aligned}$$

$$\text{Total} = 3679".4$$

$$\therefore \text{Moon's horizontal parallax} = 61' 19".4$$

$$\text{Moon's Semi-diameter} = 16' 42".4$$

$$\text{Sun's Semi-diameter} = 16' 1".4$$

CALCULATION OF THE ECLIPSE FOR LATITUDE $33\frac{1}{2}^\circ\text{N.}$ AND THE LONGITUDE OF KURUKṢETRA.

	A	B	C
Long. of Mean Sun =	92° 21' 0"	92° 25' 55"	92° 30' 51"
Local time =	1h 8m P.M.	3h 8m P.M.	5h 8m P.M.
" " in degrees =	17° 0' 0"	47° 0' 0"	77° 0' 0"

$$\therefore \text{Sid. time or R.A. of meridian} = 109^\circ 21' 0" \quad 139^\circ 25' 55" \quad 169^\circ 30' 51"$$

$$\text{Obliquity of the ecliptic (3928 B.C.)} = 24^\circ 6' 15"$$

Long. of culminating pt. of the ecliptic =	107° 46' 25"	136° 50' 5"	168° 32' 16"
Dec. of culminating pt. =	+22° 53' 11"	+16° 13' 25"	+4° 39' 18"
Lat. of place =	+33° 30' 0"	+33° 30' 0"	+33° 30' 0"
Z. dist. of cul. point =	10° 36' 49"	17° 16' 35"	28° 50' 42"
Ecliptic angle with meridian (θ') =	82° 13' 23"	71° 55' 36"	66° 19' 23"
Z. dist. of nonagesimal (ZN) =	10° 31' 9"	16° 23' 58"	26° 13' 18"

	A	B	C
Parallax in latitude	= $-11' 11''.8$	$-17' 18''.9$	$-27' 8''.0$
Lat. of Moon	= $+40' 45''.5$	$+33' 47''.0$	$+26' 46''.9$
Corrected Latitude	= $+29' 33''.7$	$+16' 28''.1$	$-0' 19''.1$
1st diff.	= $-13' 5''.6$	$-16' 47''.2$	
2nd diff.	=	$-3' 41''.6$	
\therefore corrected latitude = $16' 28''.1 - (14' 56''.4)t - (1' 50''.8)t^2 = Y$, where t is measured from B and is in units of 2 hrs.			
Culminating point			
—nonagesimal	= $1^\circ 27' 9''$	$5^\circ 30' 40''$	$12^\circ 28' 16''$
Culminating point	= $107^\circ 46' 25''$	$136^\circ 50' 5''$	$168^\circ 32' 16''$
\therefore Nonagesimal	= $106^\circ 19' 16''$	$131^\circ 19' 25''$	$156^\circ 3' 57''$
App. Sun	= $90^\circ 12' 1''$	$90^\circ 16' 55''$	$90^\circ 21' 51''$
N— \odot	= $16^\circ 7' 15''$	$41^\circ 2' 30''$	$65^\circ 42' 6''$
ZN	= $10^\circ 31' 9''$	$16^\circ 23' 58''$	$26^\circ 13' 18''$
and Moon's horizontal parallax	= $3679''.4$		
\therefore Parallax in long.	= $-16' 44''.4$	$-38' 37''.6$	$-50' 8''.4$
Long. of Moon	= $89^\circ 6' 53''.5$	$90^\circ 22' 40''.9$	$91^\circ 38' 29''.8$
Corrected Moon	= $88^\circ 50' 9''.1$	$89^\circ 44' 3''.3$	$90^\circ 48' 21''.4$
App. Sun	= $90^\circ 12' 1''$	$90^\circ 16' 55''$	$90^\circ 21' 51''$
(\odot — \odot)	= $-1^\circ 21' 52''$	$-0^\circ 32' 52''$	$+0^\circ 26' 30''$
1st diff.	= $+49' 0''$	$+59' 22''$	
2nd diff.	=	$+10' 22''$	
\therefore (\odot — \odot) = $-0^\circ 32' 52'' + (54' 11'')t + (5' 11'')t^2 = X$			
Sum of Semi-diameters = $1964'' = (M+S)$			
Diff. of „ „ = $41'' = (M-S)$			

Kuruksetra mean time.	X (= \odot — \odot)	Y (= lat. of moon)	$\sqrt{X^2 + Y^2}$	
3h 8m P.M.	$-1972''$	$+988''$	2206"	
3h 38m P.M.	-1140	$+757$	1369	-837
4h 8m P.M.	-269	$+512$	578	-791
4h 38m P.M.	$+640$	$+254$	689	$+111$
5h 8m P.M.	$+1590$	-19	1590	$+901$
5h 38m P.M.	$+2577$	-305	2595	$+1005$

Nearest approach is $.37 \times 30$ mins. after 4.8 P.M.

i.e. at 4.19 P.M., Minimum dist. = $521''$

Magnitude of eclipse = $.735 = 8.8$ Indian units.

Time of beginning = $3h 8m + \frac{2206-1964}{837} \times 30$ mins.

= $3h 8m + 9m = 3h 17m$ P.M.

Time of ending = $5h 8m + \frac{1964-1590}{1005} \times 30$ mins.

= $5h 8m + 11m = 5h 19m$ P.M.

THE SAME CALCULATIONS FOR THE LAT. OF PLACE = $35\frac{1}{2}^{\circ}$ N.

	A	B	C
Long. of cul. point of the ecliptic =	107° 46' 25"	136° 50' 5"	168° 32' 16"
Ecliptic angle with meridian (θ') =	82° 13' 23"	71° 55' 36"	66° 19' 23"
Dec. of cul. point =	+22° 53' 11"	+16° 13' 25"	+4° 39' 18"
Lat. of place =	35° 30' 0"	35° 30' 0"	35° 30' 0"
Z. dist. of cul. point = ZC =	12° 36' 49"	19° 16' 35"	30° 50' 42"
Z. dist. of nonagesimal = ZN =	12° 29' 44"	18° 17' 25"	28° 0' 20"
Parallax in lat. =	-13' 16".1	-19' 14".7	-28' 47".7
Moon's lat. =	+40' 45".5	+33' 47".0	+28' 46".9
Corrected latitude =	+27' 29".4	+14' 32".3	-2' 0".8
1st diff. =	+1649"	+872"	-121"
2nd diff. =	-777"	-993"	
		-216"	

Y = Corrected latitude = $872'' - 885''t - 108''t^2$, where t is measured from B in units of two hours.

Cul. pt.—nonagesimal =	1° 44' 4"	6° 11' 32"	13° 20' 9"
Culminating pt. =	107° 46' 25"	136° 50' 5"	168° 32' 16"
∴ Nonagesimal =	106° 2' 21"	130° 38' 33"	155° 12' 7"
App. Sun =	90° 12' 1"	90° 16' 55"	90° 21' 51"
N—☉ =	15° 50' 20"	40° 21' 38"	64° 50' 16"
ZN =	12° 29' 44"	18° 17' 25"	28° 0' 20"

Horizontal parallax (Moon's—Sun's) = 3670".6

Parallax in long. =	-16' 18".1	-37' 36".9	-48' 53".1
Long. of Moon =	89° 6' 53".5	90° 22' 40".9	91° 38' 29".8
Corrected Moon =	88° 50' 35".4	89° 45' 4".0	90° 49' 36".7
Sun =	90° 12' 1"	90° 16' 55"	90° 21' 51"
(☾—☉) =	-1° 21' 26"	-0° 31' 51"	+0° 27' 46"
1st diff. =	-4886"	-1911"	+1666"
2nd diff. =	+2975"	+3577"	
		+602"	

X = (☾—☉) = $-1911'' + 3276''t + 301''t^2$

Sum of Semi-diameters = 1964" = (M+S)

Diff. of Semi-diameters = 41" = (M-S)

Kuruksetra mean time.	X	Y	$\sqrt{X^2+Y^2}$
3h 8m P.M.	-1911"	+ 872"	2101"
3h 23m P.M.	-1497	+ 760	1679
3h 38m P.M.	-1073	+ 644	1251
3h 53m P.M.	- 640	+ 525	828
4h 8m P.M.	- 198	+ 403	449
4h 23m P.M.	+ 254	+ 277	376
4h 38m P.M.	+ 715	+ 148	730
4h 53m P.M.	+1186	+ 15	1186
5h 8m P.M.	+1666	- 121	1670
5h 23m P.M.	+2156	- 260	2172

$$\text{Time of beginning} = \frac{2101-1964}{422} \times 15 \text{ min.} = 4.87 \text{ min. after 3-8 P.M.} \\ = 3.13 \text{ P.M.}$$

$$\text{Time of ending} = \frac{1964-1670}{502} \times 15 \text{ min.} = 8.79 \text{ min. after 5-8 P.M.} \\ = 5.17 \text{ P.M.}$$

Duration of eclipse = 2h 4m.

Minimum dist. bet. the centres = 361" which occurs at 4-18 P.M.

Magnitude of eclipse = 0.792 = 9.5 units.

APPENDIX III.

*A Note on a Method of Finding a Central Eclipse
near a Past Date.*

The problem of the paper to which this is an appendix was to find a central solar eclipse on the summer solstice day visible in Northern Punjab, within the range 4000 B.C. to 2400 B.C. As shown in the body of the paper a central solar eclipse happening on the 21st July, 3146 B.C. obtained by a pure chance, formed the starting point for further calculations. A method now occurs to me which shows that a chronologist need not depend on any such chance. Further he need not depend on a book like Oppolzer's in which all eclipses are calculated from 1200 B.C. up to the present times. The equations for the moon's elements used by Oppolzer, were those given by Hansen, which have been thrown away by international astronomers. Hence Oppolzer's great work has become somewhat valueless. We have now to use Newcomb's equations for the sun's elements and Brown's for those of the moon. To undertake another great work like that of Oppolzer with the most up to date system of astronomical constants should be now considered unnecessary on the score of the labour it entails, in the light of the elegant method presented in this note.

Problem 1. To find a central solar eclipse near the date 4000 B.C., happening on the summer solstice day and visible from the Northern Punjab.

Here we are to remember that the longitude of the ascending node should be about 85° or that of the descending node about 95° , on the day of the eclipse if this is to be visible from the Northern Punjab.

(a) We first work out the shifting of the equinoxes from 4001 B.C. to the present time say 1940 A.D. This works out to have been $82^\circ 27' 23''$ nearly. Hence what was 90° of the longitude of the sun in 4001 B.C., in 1940 would become $172^\circ 27' 23''$. The sun has this longitude now about the 16th September.

(b) Now on looking up the nautical almanacs, we find that there was a new moon on the 15th September, 1936.

(c) Again from 4001 B.C. to 1940 A.D., the number of years elapsed = 5940. The correct lunisolar cycles in sidereal years we should use, are 1939 years and 160 years.

Now $5940 = 1939 \times 3 + 123$.

Hence the elapsed years 5940, have to be increased by 37 years and we have—

$$5977 = 1939 \times 3 + 160.$$

(d) We then apply 5977 sidereal years or 2,183,137 days backward to the date, 15th September, 1936, and arrive at the date 4042 B.C., July 26.

(e) On this day at G.M.N. the longitude of the moon's ascending node was = $321^{\circ} 42' 36'' 62$.

(f) We now use the eclipse cycle of 19 tropical years in which the node's position is decreased by $7^{\circ} 32'$ nearly. We want to reduce the longitude of $321^{\circ} 43'$ of the node to about 275° , i.e. by $46^{\circ} 43'$ which comprises $7^{\circ} 32'$ six times nearly. Hence, we have to come down by 19×6 or 114 years. The year arrived at is 3928 B.C. Calculation of the eclipse on the summer solstice day of this year may now proceed as shown in the body of the paper, remembering that in 114 years (tropical) there are 41,638 days.

Problem 2. To find the central solar eclipse which happened on the autumnal equinox day, visible in Northern Punjab near about the year 1400 B.C.

On the autumnal equinox day the sun attains the longitude of 180° . In order that the eclipse may be visible in Northern Punjab, the ascending node should have the longitude of about 175° or the descending node 185° nearly.

(a) From 1401 B.C. till 1940 A.D. the shifting of the equinoxes becomes $46^{\circ} 17' 26''$. Hence what was 180° of longitude of the sun in 1401 B.C., has become $226^{\circ} 17' 26''$ in present times. This corresponds to the date of November, 10 of our times.

(b) On looking up nautical almanacs we can find that a new moon happened on November, 10, 1931 A.D.

(c) Now the elapsed years, 3340, till 1940 A.D. needs be adjusted a little as before. We have to increase it by 39 years, and we have,

$$3379 = 1939 + 160 \times 9.$$

(d) We apply to the 10th November, 1931 A.D., 3379 sidereal years or 1,234,201 days backward, and arrive at the date 1449 B.C., October 5.

(e) On this date the longitude of the ascending node at G.M.N. was = $201^{\circ} 2' 23''$.

(f) We have to reduce this longitude of the node to 175° nearly by using our eclipse cycles. Now by our cycle of 19 years repeated 4 times we can reduce it by $30^{\circ} 8'$ to $170^{\circ} 54'$ by coming down to 1373 B.C. We have now to raise it from $170^{\circ} 54'$ by a further coming down by the eclipse cycle of 372 years, to $175^{\circ} 15'$ nearly for the year 1001 B.C. as in Oppolzer's finding. Altogether we had to come down by $19 \times 4 + 372 = 448$ tropical years.

Hence by the method thus illustrated, we can find near about any past date, any sort of solar eclipse we have any record of, however vague it may be. There is thus no necessity for finding all the solar eclipses from so far back a date as 4000 B.C. up to our modern times.

I trust the attention of astronomers and chronologists all over the world will be drawn to the method presented here for finding an eclipse of a back date, and hope they would further develop it and remove from it any flaws that they may discover.

Some Beliefs and Customs relating to Birth among the Santals.

By W. J. CULSHAW.

The ordinary way of announcing the birth of a new child among the Santals is to say, 'Nawa peraye heś akana'. 'the new relation has come'. The infant is regarded as a definite asset to the family, with certain exceptions noted later, and they commonly speak of children as the gift of 'Cando Boṅga', the supreme God; hence a birth is an occasion for rejoicing and congratulation. A villager to whom the announcement of a new birth is made will as likely as not respond with a question, 'What is it? Is it one who carries on the shoulder (a boy), or one who carries on the head (a girl)?' There are other figurative ways of referring to the sex of children, though these are used at other times. Thus, when a father is talking about the number of children he has, he will often say, 'Pe iṛi ar pe erba menak-kotiña', 'I have three girls and three boys'. 'Iṛi' is a cultivated millet (*Panicum crusgalli*, L.) used figuratively to refer to girls, and 'erba' is a seldom cultivated grain (*Setaria italica*, Kunth.) used as a term for boys.

It may be that the birth of the child has been long looked for. Women may resort to shrines famous in the locality for granting the boon of children and making an offering. There is a hill situated in Raniband Thana of the Bankura district at the summit of which resides such a deity and cases are reported of Santal husband and wife making the climb to the summit together. More often the husband feigns a certain indifference in such cases, but his mother is not likely to let matters rest, even if the wife herself should wish to do so, and it is a fairly common thing for medicine to be taken to ensure the birth of a child. People who have knowledge of these remedies are well known in their own localities, and their medicines are their own closely guarded secrets. One medicine which has to be taken during the menstruation period is said to ensure the birth of a boy. In any event, from the time when pregnancy is suspected, the expected newcomer begins to exercise influence on the life of the home, and especially over the actions and conduct of the parents. A pregnant woman is called 'poṣṭi', the common Bengali term, but here too the Santal love of figurative speech finds full play, and other common terms are 'bharti hoṛmo' (full body), 'bhari hoṛmo' (heavy body), and 'bar jivi' (two souls). Her movements are restricted; she must not go anywhere when the sun is directly overhead; nor will she

go anywhere alone at sunset. The restriction against crossing a river is by some said to hold only in the case of a woman pregnant for the first time. She must not sit on the verandah of the house with her legs hanging down, her hair loose, and any portion of her cloth hanging loosely from her body. They themselves ascribe these rules to the desire to escape the influence of 'bhuts'. Nor must she walk over the straw rope used in binding rice granaries. She cannot take life, nor look on a dead body. She must not weep when someone dies. Nor can she go out during an eclipse of the moon, nor look at it from the house. A number of restrictions are enjoined to influence the child in one way or another. Thus when the pregnant woman hears thunder, she will clasp the 'gurgu' (the cylindrical grinding stone for grinding the spices) to her abdomen, and feels that by so doing she will prevent her child from growing up a coward. She will not take anything not belonging to her without asking for it, lest her child become a thief. Certain actions may influence the physical appearance of the child. She will not break off the fork of a forked piece of turmeric, lest her child be born with forked fingers. It is not good to look on the image of a god (these are not in Santal homes or villages, but many Santals now live among Hindu neighbours), for that is something with a semblance of life, yet it is dead. If she sees an elephant, her child may have ears large like those of elephants. If a monkey, then the child may have a nose wide-nostrilled and 'squashed'; if a snake, then the child may be always putting out its tongue. The pregnant woman's taste in food should be humoured, or her child's mouth will for ever 'water', he will be a great 'slobberer'. Some of these things throw an interesting light on the Santal's idea of what is seemly in appearance. I have not been able to come across any diet restrictions with a basis of magic; some foods are particularly nourishing, and that is all. One of my friends can remember a case in his own family when a child was born without an anus. When the women were discussing this, they put it down to the fact that the mother had eaten the flesh of flying fox during pregnancy; the reason being the belief that flying foxes are without this feature in their anatomy. In this case, which occurred about thirty years ago, the child was thrown away while it was still alive.

The father of the child has his part to play during his wife's pregnancy. There is no ceremonial separation from his wife, and intercourse would appear to be common up to about the sixth month. There is a strong sentiment also against intercourse with any other woman during the time. There appears to be no rule as to when intercourse may be resumed after the birth of the child. The father must also observe the taboo against taking life, and he must avoid all contact with dead bodies. He cannot go to a house in which a death has taken place, nor can he carry a body, or take any part in funeral ceremonies. He

may go out to the annual hunt with the other men, but cannot kill, nor can he be asked to carry a kill; he cannot eat the flesh of the head of any animal killed in the hunt, or of any animal offered in sacrifice.

One custom suggests that the child has some status before birth. Bodding in his Dictionary relates that if a 'Jom Sim' festival is being observed by the family of a pregnant woman, this being a festival when all the members of a family living in a neighbourhood are invited, the pregnant woman is served with two platefuls of rice, in recognition of the fact that she is 'bar jivi'. I have not been able to obtain personal confirmation of this; the 'Jom Sim' is but rarely observed nowadays, and no one whom I have questioned seems to know of this custom. As with all people, the women will speculate about the sex of the coming child. If the woman begins to look rather sickly, and especially if she is thin about the neck, then they say she will have a boy. The 'quickenings' is not marked in any special way, but that it does have some effect on the attitude of the people to the expected child is shown by the fact that when a woman with child dies, special precautions have to be taken only in cases when the death takes place after the quickening. In such cases, the husband has to cut open the abdomen of the dead woman; the foetus is removed and buried separately behind the house, and the ordinary funeral rites are carried out over the body of the mother. Should this for any reason not have been done, the woman is said to become a 'curin'; her spirit inhabits the banks of streams and waylays those who pass, especially young men. Women wear iron bangles, which serve the purpose (among other things) of protection against the 'curin'.

For the delivery a midwife is engaged. She may be someone connected with the family, though in such cases it is much better to employ someone who is a 'classificatory' grandmother, rather than anyone belonging to the father's or mother's generation; this is because in the presence of the latter generation the woman has to observe certain rules of decorum and it will be a shameful thing for them to see her in her nakedness. The midwife is generally called a 'dhai', also an 'ojha budhi' (old medicine woman), and 'daḱ dul budhi' (the water pouring old woman). She is always a Santal, and she is sent for when the pains come; she is either an inhabitant of the village, or of one very near at hand. All the other matrons of the village are informed at the same time, and gather, as they say, to give courage to the mother now that her time has come. In the case of a dispute, which I once helped to settle, the aggrieved husband gave as proof of the infidelity of his wife the fact that her mother (to whose protection the girl had fled) did not inform any of the villagers at the time when the baby was born. The day of delivery is known as 'durup din' (sitting day), which illustrates

the mode of birth. Birth takes place in the ordinary dwelling-house, and the woman generally sits on the floor on which a mat may be spread. There would seem to be no rule, however, against her sitting on a string bed and this sometimes happens. Whichever it be, the woman generally keeps to the same place, either floor or bed, for the birth of all her children. She is supported from the back by another woman, who again may be either two generations above her, or one of her own generation, either husband's sister, or husband's brother's sister, but not by her mother-in-law or by an aunt. The characteristic work of the midwife is to cut the umbilical cord, which is not done normally until after the placenta has fallen. The child is not put to the mother's breast until after the cord is cut. It is cut by an arrow, with a coin put under it, which may be a pice, or even an eight anna piece, according to the financial condition of the family. This coin is handed over to the midwife. Midwives have a way of being able to tell the sex of further children by a reading of the signs on the umbilical cord, according to the position of certain irregularities in the surface, caused, I believe, by the twisting or congestion of blood vessels. They can also in certain cases determine the sex of subsequent children, or of the next child, according to the place at which the cord is cut. In cases of difficult delivery, should there be an 'ojha' near at hand, resort may be had to him; one method he adopts is to take a square of the bark of a plantain tree in his hand, about six inches square, and prick it repeatedly with a needle, saying his 'mantra' the while. This he can do in his own house. Another method adopted is to give the mother water to drink which has been poured down a dagger standing upright. Another method is the tying of a root to the hair of the mother. This root with the hair must be cut away as soon as the birth has taken place, otherwise they say, all the mother's entrails will come out as well. In such cases also the husband comes in for a certain amount of chaffing from the women who are in the 'joking relationship' with him; they accuse him of having done something irregular when he was with his wife at the time when conception took place, thus having caused her difficulties. No men are admitted to the room at the time of delivery. The husband has to keep himself at hand in the courtyard, one of his duties being to keep handy the materials for lighting a fire in the house after the birth, which fire will be used for 'sekao', massaging his wife's abdomen, and the infant, after birth. No fire is kept in the house at the time of the birth. As soon as the child is born the women call out, and the husband takes a large stick and repeatedly beats the roof with it, shouting out to drive away the 'bhuts'. He is admitted to the house as soon as the floor is cleaned up and his wife resting, whereupon he has to dig the hole in which the afterbirth is buried. This is buried in the house, at any place which is not directly under a rafter,

and he generally digs the hole with a ploughshare. The Santal will often refer to the place of his birth as his 'buka topa ato', the village where his cord was buried.

As soon as the child is born, he is expected to cry out. If he doesn't then strenuous efforts are made to restore his life. The midwife chews pepper and garlic, and blows into the child's mouth, nostrils and ears, and will persist for a long time; the others in the house will seek to waken the child by making a great noise on any brass plates and cups there may be in the house. (None of the ordinary household goods or utensils are removed from the house before the delivery takes place.)

Though it is probably true to say that all births are welcome, not all are welcome to the same degree. People are most pleased when the first child is a boy. If a woman has a succession of girls, she is soon likely to feel the effects of the disappointment of her husband's relations. A third or fourth daughter born into a house where the husband's mother is supreme does not in all cases have an extraordinary good chance of survival. A child born with teeth is considered highly unfortunate—'this child will eat us', they say. People are reluctant to admit that nowadays such children are thrown out, though they say such things 'used to happen'. They probably still do, though I have no direct evidence of the fact. In connection with another case we saw that a child was admittedly thrown away, about thirty years ago. All deformities are not regarded very seriously. One boy known to me was born with an additional finger on each hand as well as an additional toe on each foot. The additional fingers were cut off, though the toes were left; I cannot say whether there was any deeper significance in this beyond a desire to improve appearances. But an old man who was told of this case expressed disapproval. 'If Cando', he said, 'gives me a child with six fingers, who am I to cut off one of them?' Premature children are supposed to develop a big thirst in later life. There is also a belief that children born in the sixth month or eighth month will die, but those born in the seventh or ninth month will live. (The period of gestation is calculated as ten months.)

Twins are not regarded as a misfortune. No special ceremonies are performed at the birth of twins, but they are regarded as 'boŋga' children, and there are special rules about the names to be given to twins, which are noted below. A child born on a Sunday is endowed with disconcerting powers. If you look in his direction when you are eating, you are liable to be seized with a violent attack of cramps. The 'Chaṭiār' (Naming) ceremony of the child must take place during the month in which he is born. In connection with this custom, a child who is unfortunate enough to be born on the night of the new moon is taken outside to the dung heap outside the house, and according to Bodding he is placed upon it and then swept up by the midwife

into a winnowing fan by means of a broom, and then taken in to the mother. If we add that until this operation is performed the cord is not cut, it will be seen that the operation presents some difficulties. My information is that it is carried out more or less symbolically, without a rigid adherence to formula on all occasions. But the precaution is a necessary one, lest the child should be widowed in after-life; a 'token' sweeping up is as effective as the actual. Children born in a caul are regarded as unfortunate. When a woman conceives after the birth of a previous child before her menstruation begins again, the phrase used to describe such births is 'potomte janam', which signifies strictly being born in a caul, though such children are obviously not all born in cauls. Perhaps there is here an indication of an original belief that all such births took place in a caul. Be that as it may, nowadays all births which are described by the phrase 'potomte janam' are unfortunate. In such cases the blacksmith is asked to make a miniature kudi (spade), taṅga (axe), and cimdi (pincers); these are tied round the child's waist, where they remain until he or she is about five years old. This precaution is taken against the danger of the child being struck by a thunderbolt. One might add here a Santal saying which is used to say that a woman has got over the dangers of childbirth. It is 'Rohor dare khone argō akana', literally, 'She has come down from the dry tree'. It has been suggested to me that this may have some reference to a custom in some parts of the world for a woman to climb a tree when delivery is difficult; I can find no trace of such a belief among the Santals. The only explanations of the saying offered to me are that as it is dangerous to climb on the dry branch of a tree, so childbirth is dangerous; and also the simile of a tree which bears fruit applied to a woman who bears children.

Before beginning an account of the various ceremonies related to birth, it is helpful to keep in mind the social purposes served by these ceremonies among the Santals as among all primitive, or for that matter, many advanced communities. These purposes may be roughly classified as they affect the new-born child, his parents, or the community into which he is born. So far as the child is concerned, we have seen how much can be done to ensure his future well-being. In addition to this, he must be given some status in the family and community and so be acknowledged by them; this is done through the granting of a name or names. His parents are under an obligation to remove the taboos consequent on the crisis of a birth in the family, which have affected the father no less than the mother. The village community as well as the family has to acknowledge the child, and the village as well as the house is to some extent affected by the period of pollution. It will have been apparent that the Santals are well acquainted with the facts of physical paternity. There does not appear to be any trace in their beliefs

or in their customs of a time when this was not the case. No relations other than the actual parents have any specific parts to play in the ceremonies grouping round the birth of children.

We possess a valuable account of these ceremonies as they were in the Santal Parganas about seventy years ago, in the book written in Santali and published for the first time in 1887 by the Rev. L. O. Skrefsrud of Benagaria, entitled 'The Traditions of the Santals'. It consists of material which he took down from the mouth of an old Santal named Kolean who was his 'guru', in the years 1870-71. It is unlikely perhaps that the book contains a complete account of all ceremonies—it contains no answer to many of the questions which rise to one's mind—yet a comparison of the account with what can be observed at the present day in an area far removed from the Santal Parganas, throws into relief not only some changes of a minor kind but also the extraordinary tenacity with which the Santals are holding to many of their old customs. The best course is to give a translation as literal as possible of the section of the book entitled 'Janam Chaṭiār'. 'Chaṭiār' is translated by Bodding as 'ceremonial cleansing'; the emphasis of the word is not so much on the removal of pollution, which admittedly forms a part of the concept, as on admittance into society, a kind of initiation. It is in fact used for two ceremonies, the 'Janam Chaṭiār' at birth, when the child is named, and the 'Caco Chaṭiār' later on, when the child is granted full status in the community.

The following is a translation: 'Children belong to the sept of the father, not to that of the mother. When a child is born in some village, the village becomes unclean (chut), and until the pollution is wiped out, the people perform no religious ceremonies. In whoever's house a child is born, the house is polluted and until the pollution is wiped out no one in the village will partake of food and drink in that house.

In the case of a boy, they are ceremonially shaved on the fifth day; in the case of a girl on the third day. On the day of the shaving, the father of the child calls together all the poor folk for the ceremonial shaving. They collect at his house and engage a barber for the shaving. He first of all shaves the Naeke, then the Kuḍam Naeke, the Mañjhi, Paranik, Jog Mañjhi, Jog Paranik, and Goḍet (these are the names of the Santal village officials. It would take us too far from the subject of this paper to enter into any explanation of the terms. They may be translated as follows: Priest, Co-priest—one with slightly different functions,—Headman, Deputy Headman, Censor of Morals, Deputy Censor of Morals, and Village Messenger), after which come all the men of the village, and last of all the father of the child.

Then the barber asks for the new-born child. The midwife carries him out near the door, bringing two leaf-cups (bhāutiè), one for water and the other for keeping the hair in. The barber

shaves the child, whereupon the midwife puts the hair into the cup; after which she ties two threads to the arrow with which the child's umbilical cord was cut. The father of the child places oil in the leaf-cup, and takes all the male adults of the village along together to the watering place to bathe. Off they go. When they return the midwife takes the women along to bathe there, taking along with her oil and turmeric, and the arrow with the two threads tied to it. Off they go. At the 'ghaṭ', the midwife sends one of the threads floating away with the child's hair, having first of all made five vermilion marks on the 'ghaṭ'. That is called 'buying the ghaṭ'. She washes the second thread and the arrow, and brings them back to the house when they have all bathed. Back at the house, the midwife soaks the remaining thread in turmeric-water and ties it round the waist of the child. After which the child is placed in its mother's arms, lying on 'atnak' leaves (*Terminalia tomentosa*, W. & A.), the mother sitting under the eaves of the house.

Then the midwife kneads some cowdung with water under the eaves. She then lets it drip on the mother of the child, who takes up a little in her left hand and rubs it on her head, and she also sips a little. Then the mother goes into the house and lays the child down on a string bed. The midwife mixes meal with (adwa) rice and water, three leaf-cups (phuṛuḱ) full, takes one of them and sprinkles the meal on the four legs of the string bed and throws away the cup. Then with another she sprinkles the meal on the chests of the Naeke, the Kuḍam Naeke, the village Mañjhi, Paranik, Jog Mañjhi, Jog Paranik, and Godet. And so with all the men of the village.

The contents of the remaining cup are sprinkled in the same way on the chests of the Naeke's wife, then following in the same order the wives of the Kuḍam Naeke, the Mañjhi, the Paranik, the Jog Mañjhi, the Jog Paranik, the Godet, and then all the village women.

Then the old man and woman of the house (i.e. the parents of the child) will ask each other, 'After whom shall we name him?' If it is a boy, they will say, 'We'll give him father's name', and if a girl, 'We'll give him mother's name'. The first-born boy gets the name of his father's father, and the first girl gets the name of her father's mother. The second boy gets the name of his mother's father, and the second girl that of her mother's mother. When those are used up, they get the names of their paternal uncles and aunts and their maternal uncles and aunts.

Then the midwife will come out to the courtyard and announcing the name will make obeisance and say to them, 'From to-day (if it be a boy) call him by this name at the hunting', (if a girl), 'Call her by this name when you say to her, "Come along", as you go to draw water'.

Then they bring out leaf-cups of a brew of 'nim' leaves in rice water to the courtyard; they give to the men first of all in the same order as that already mentioned. And then to the women in the same way. The pollution is wiped out and the child has entered into the circle of relations. After another five days the barber and the midwife alone again shave the child. And with that it is finished.

The midwife receives the following: For a boy, a cloth of three cubits, one mūṛi of paddy (1 maund), and one wristlet for cutting the cord. For a girl, a cloth of three cubits, a bisa of paddy (half the above), and a wristlet for cutting the cord.

So ends our authority. There are several points in this account which call for some comment. To begin with the last statement; the remuneration of the midwives in ancient times seems to have been on a rather lavish scale. Nothing like that amount of paddy would be given nowadays even by well-to-do Santals, who are few and far between. In this southern area of the Bankura district, however, it is still true that the commonly accepted amount of paddy is for a girl only half what it is for a boy. The first sentence in the account indicates that Santal society is patrilinear.

The village is regarded as unclean. At this point it is convenient to mention that the day on which the 'chaṭiār' is performed is by no means as rigid as the account suggests. Thus, the fact that no sacrifices can take place in the village until after the pollution has been removed means that rather than abandon a festival owing to the inopportune arrival of an infant the ceremony may be advanced so as to take place even on the very day of the birth. Another reason why the time may be altered, advanced or even delayed, is owing to pressure of work during the cultivation season. The ceremony will not, however, be performed on an even number of days after the birth. But ordinarily speaking the times are still observed on the days stated; one reason for this, not mentioned in the account, is the fact that rice beer must be brewed to be served to the guests when the naming is over, and it takes three days to brew good beer. 'Haṇḍi' is regarded as a *sine qua non*—as the Santals themselves put it, 'Bukare haṇḍi, jaṇre haṇḍi', 'Rice beer at the time of birth (lit. the umbilical cord) and at the time of funerals (lit. the bone, a reference to burial customs)'. If a family is in a position to do so, they generally also provide a feast for their relations and friends on the occasion. The ceremony is not often delayed beyond the seventh or the ninth day after the birth of the child. In some parts of the area best known to me at least, the Santals distinguish between the two aspects of purification from uncleanness and the admission of the child into society to the extent of having two separate ceremonies; thus the fifth day may be observed as 'um hiloḱ', the day of bathing, and the child be named on the seventh day, the latter

being called the 'chaṭiār', and being the more important socially in that more of the villagers attend. The community consciousness of the Santals has to this extent weakened that it is now the exception rather than the rule for the whole village to turn up on these occasions; the numbers who do will depend to a great extent on the position the parents occupy in the esteem of the community. Another indication of the separation of function in their minds is shown in the words of an old Santal who said, 'On the day of the birth we begin to brew two pots of "haṇḍi"—one being "chut haṇḍi" (pollution-removing) and the other being "chaṭiār haṇḍi" (naming)'.

An interesting corollary to the state of pollution of the house is that if any one should be wearing a charm against illness, he will remove it before going to the house for any reason, lest it lose its power. There is no rule about confining the mother to the house after the birth for a specified time; in fact there are well-authenticated cases, for example, of a woman going to a nearby jungle to gather wood and leaves on the afternoon of the day in which her child was born, and of working in the courtyard the same day. The father, as we have seen, goes into the house almost immediately after the birth. The arrow with which the cord was cut is left standing upright through the strings of the bed on which the infant spends the day, until the time of the 'chaṭiār'. The barber who is 'engaged' is never of a barber caste, in fact such a one would not cut a Santal's hair, but he is always a Santal, generally of the village, though he may be a stranger, and in any case he must belong to a different sept from that of the father. As it is quite possible that all of the village officials will not be present at the 'shaving', it follows that the order in the account is not rigidly adhered to, but in any case the father is still shaved last of the men, and following him the child. The men's faces are shaved, and their hair may be cut; in the case of the child five locks are cut from the head. Two at the front, one to each side of the head, and one from the middle of the back of the head. The hair of the child is still disposed of as stated in the account. (At some time later in life, it is common for cut hairs to be thrown away at the foot of a clump of bamboo, with the idea that this will cause the hair to grow well, something greatly to be desired in the case of girls.) No special notice is taken of the nails. The sipping of the cowdung meal, and the sprinkling of the meal prepared from rice and water appear to be still carried out in much the same way; though here again there is slackness about times and seasons. The rice meal may be sprinkled on anyone who goes along to the house after the birth has taken place. Similar latitude is observed about the drinking of the brew of nim leaves, which is prepared in the following way: the leaves are roasted and then powdered, then mixed with hot rice-water, i.e. water in which rice has been boiled. It is

served on the day of the birth nowadays in these parts to all members of the household, and to any other women and children who go to the house. Men fight shy of it, and one said to me that it is drunk as a sign of sympathy for the mother, it being a very bitter drink! The mother continues to drink some of it for several days after the birth of the child, and it is supposed to increase the flow of her milk. The reference to the second shaving five days later, when the barber and the midwife return to the house, I have not been able to confirm. It is unknown here. The midwife may indeed stay on for a few days, if the mother is weak, for the purpose of 'sekao', and for this service she is paid extra, and given her food.

One ceremony which commonly takes place on the day of birth has not been alluded to in the account. It may be a recent and a local borrowing. It goes by the name of 'meŋ halan', which may be translated as 'raising the eyes'. The mother and the midwife sit opposite to each other on the floor. The mother fills a leaf-cup with 'paŋa' (distilled liquor, which unlike rice beer can be stocked for the occasion), and passes it over to the midwife, who takes it in her hands, and throws it away to the left; this is repeated three times.

There are several interesting points to be noted in connexion with naming. It is quite common for the father and mother of the child to talk between themselves before the birth of the child and decide what name they would like to give, but this they will not reveal to anyone else. At the 'chaŋia' one of the assembled company may ask, 'Of what country is he (or she)?' To which question the correct answer is to name the village of the paternal grandparents if the child is going to be named after them, or of the maternal grandparents as the case may be. An exception to the ordinary rule may be made in the case of a child who cries a lot, a fact that shows it is not happy about its own name. These words were once used by a Santal explaining the matter to me, 'Sometimes amongst us children will sleep soundly from the very time that they are born, and sometimes they cry like crows and kites! In that case we get hold of an "ojha" (the word is used loosely here for anyone who knows the method of divination by leaves and oil), to tell us the reason, and say to him, "See what this child is up to—why does he cry?" The "ojha" having asked for oil, reads the signs and will then announce, "Such and such a dead relation is claiming that the child be named after him". This generally happens when we want to name the child after someone on the mother's side; the dead ancestors on the father's side try to prevent this'. The Santal who told me this was actually talking about the birth of twins at that time. He continued, 'To-day the babies didn't cry at all for they were to have "boŋga" names'. There are some confused legends used to explain the current practice about the naming of twins. According to one account, Maran

Buru (lit. the great spirit—but not a name for the supreme being; one might call him the patron spirit of the Santal tribe) had twelve sisters who were twins. I have also heard it said that the children of Cando were twins. Cando is the name most commonly used now for the supreme spirit; which does not prevent a vague identifying with the sun, and the ascription of children, as in the Santal legend of the sun and the moon. Anyway twins are named after these mythical beings. Names given to girl twins are Cita and Kapur, Dargi and Porgi, Hisi and Dumni; boy twins are named Ram and Lokhon, Loba and Kisur, Cand and Bhaira, Sidho and Kanhu. I have never succeeded in discovering what names are used when a boy and girl are twins. Several whom I have talked with about it have stated categorically that such a thing never happens, and unfortunately I have never myself heard of a case among Santals; it may be that the reluctance to acknowledge the possibility—or reluctance to give information on the subject—is connected with the superstition which regards this as a kind of incest, but the explanation may lie in the simple fact that I have been unlucky.

No Santal escapes with but one name. The name which is attached to him at the time of the 'chaṭiār' is known as his 'bhitri nūtum', or private name. This is given more or less according to the rules of precedence given in Kolean's account, and it makes no difference whether the relation after whom the child will be named is alive or dead. In addition to the private name the child receives at least one 'cetan nūtum' or 'bahna nūtum', a nickname. One reason why this is necessary is the fact that there are certain relations who will never be able to use his 'private name', owing to the relationship in which they stand to the original owner of the name and by which they are precluded from pronouncing the name. It is in fact general, if, for example, a child has been named after his grandfather, who is alive, he will never be called by the grandfather's name until after his death. Nicknames multiply as the child grows, and change too. He often receives them from relations who are in the 'joking relation' with him, and they have no more significance than as playful terms of affection. Hindu names used nowadays by many educated Santals and by Santal boys studying in schools are often assumed by themselves, and perhaps bear some resemblance to their own 'bhitri nūtum'; thus Podō has become Padma Lochan, and Kala has become Kalachand. Many of these names are, however, now becoming naturalized. The following names have all been applied to a friend of mine at one time or another. At his 'chaṭiār' he was given the name Siṅgrai, after the elder brother of his paternal grandfather; from the same time he was also known as Jhongol, this being the 'bahna nūtum' of the same person. After a very short time apparently he became generally known as Thenṭa, signifying a bundle of mischief. Later on he was known as Sorkar for short,

Daṅgra Sorkar in full. Behind this lay another joke. Sorkar is a name given to people who get some education. Most of that class also give up the eating of beef, but this particular Sorkar was a beef-eater, or so said his friends to tease him !

Kolean has some words about illegitimate children, describing the steps taken to provide them with fathers, but the subject has little more than academic or rather legal interest. Illegitimate children are extremely rare. For one thing abortion is quite often practised; and if the expectant mother allows the child to survive at all then it is usually because she is almost certain that she will be able to compel the father to marry her. There is not often any reluctance to do this. I have heard a story of an illegitimate child about whose paternity there was considerable doubt. All the young men of the village were assembled and the child was set in the midst and told to go to his father, which he did, and they all, one imagines, lived happily ever after. But this remnant of a myth is laughed at by the sceptical, and recognized for what it is, a piece of improving fiction. There is not often much difficulty in getting the partner to 'confess'; and in any event, there are not many secrets kept for long in the typical small hamlet in which the Santals live.

REVIEWS OF BOOKS.

THE ARCHAEOLOGY OF GUJERAT. By H. D. SANKALIA.

It was with a desire to learn rather than to criticize, that I opened Mr. Sankalia's book on Gujerat, as there are but few of us who are in the position to instruct a specialist in his own subject, and this desire has in a very large measure been fulfilled. The writing is clear and succinct, the arrangement of the material is excellent, and the work in general is laudably free from the prolix and repetitive manner which so frequently mars a doctorate thesis. I must however confess to one definite disappointment. On the first page of his Introduction he says—'The aim of the present writer, therefore, was to study the entire archaeological material, prehistoric as well as historic, of Gujerat and Kathiawar', I was therefore surprised to find that the sole reference to the prehistoric period was on the fourth page of the same Introduction, where brief mention is made of the work of Bruce Foote, Sarup Vats, G. S. Ghurye and Hiranand Sastri. It is a great pity that such evidence as had been collected by Bruce Foote, of very interesting microlithic sites all over Gujerat and Kathiawar, was not summarized, and a great opportunity for original study, which was afforded by the problem of linking the stone cultures of Gujerat with those of Sind, was not pursued. The Island of Cutch also produces an individual microlithic culture of great interest, which is represented by specimens in the British Museum.

It is a pity also that the work on the extension of the Indus Valley Cultures into Gujerat is not touched on in greater detail. Such an extension is I believe proved, though I have not seen the material, and past experience in this matter has confirmed me in the opinion that, as regards extensions of the Indus Valley Cultures, seeing is believing. I think that it is unlikely that these cultures spread south of the Narbada along the coast; they certainly did not do so inland, the gorges and forests of the Satpuras and the Mahadeo Hills proved an effective barrier for centuries if not for millenia. A point of great interest however is that the Sabarmati River is the source of the uncommon stone amazonite found in jewellery at Mohenjo-daro. As was pointed out by the reviewer in 'Man', 1935, 49 and 1936, 140 and in 'Iraq', Vol. VII, Pt. I, 1940, this green felspar amazonite was found by Bruce Foote near the village of Derol, just north of Ahmedabad, on the Hiranpur plateau on the right bank of the Sabarmati. It was from here, not from the Nilgiris as is insisted by some authors, that the people of the Indus Valley got their amazonite, the reason for this being not merely its greater

proximity, but the total absence of this stone in the Nilgiris, which has been attested by the Geological Survey of India.

Mr. Sankalia begins his brief history with the Mauryas, whose influence is proved by the Asokan rock edicts of Junagarh and other less direct but probably reliable evidence. He then feels, in common with most other writers, that the Sungas and Andhras should be mentioned, though he quite rightly does not in any way stretch the evidence to show that they played any real part in the history of Gujarat. He uses his sources well, particularly Tarn, in dealing with the difficult Greek and Saka periods. To what extent the Andhras under Satakarni Gotamiputra occupied Gujarat and Kathiawar, after their clash with the Ksaharatas attested by the Nasik cave inscription, is difficult to say, but archaeological evidence for such occupation appears to be non-existent. It is more likely that Gujarat remained in Saka hands; the incursion of Satakarni Gotamiputra being little more than a successful raid, the Sakas speedily establishing themselves. On page 187, it is stated that—'The symbols—caitya, etc.—reveal the early Andhra contact'. The reasoning is not self-evident; these symbols are common on Taxilan coins, accompanied by Kharoshti inscriptions, and are common in any area in which the punch-marked coins almost certainly remained current, and do not indicate any specific cultural contacts.

Once we get to the Guptas, Mr. Sankalia is on firm ground and handles his materials with a sure touch and unfolds the history of Gujarat with clearness and authority. The Gurjjaras, from whom the area has been named, are extremely interesting, but whatever their origin may have been, they were wholly Indian in culture and religion at the time they enter the history of Gujarat.

Having summarized the history of the area the author goes on to deal with the actual archaeological material, the sculpture and the architecture, which unfortunately appears to be the sole archaeological material recorded in many areas in India. Dependent on these are the chapters on Iconography, Cults and Religion. The difficult archaeological problem of the Gop temple has been well reasoned, and the rejection of the Kashmiri influence appears to be on firm grounds, and the date of 5th century A.D. can be regarded as having sound arguments in its favour. The two outstanding temples appear to be the Nilakantha Mahadeva temple at Sunak, late 10th or early 11th century, and the Surya temple at Modhera, middle 11th century. These temples also contain what appear to be the best of the sculptures, but even so they are of indifferent quality. They do not compare with the contemporary Candella sculptures at Khajuraho, let alone with the classical sculptures of Ellora and Elephanta. The Vimala and Tejahpala temples at Abu, which the reviewer has seen, are marvels of intricate carving in marble,

but they contain no great sculpture. Tejahpala and his two wives (fig. 77) are deplorable, in fact there is little of Jain sculpture that is of any merit; the Ambika statue in the Jagannath Sabha at Elura is most attractive and far above the level of normal Jain sculpture, and the huge statue of Gomateshvara at Belgola has a certain grandeur because of its size, but the Jain sculptures as a whole can best be summarized by the words of Mr. Roger Fry who says on page 163 of 'Last Lectures'—'Perhaps it is as well to see for once from this Jain image how bad Indian religious art can be. The Jains I believe cultivate nudity, but it would appear that they get very little good by taking off their clothes as far as any appreciation of the plastic possibilities of the figure are concerned'.

One feels that more might have been made about certain other archaeological features, Barygaza only receives passing mention once, and nothing is said about Gujerat as the most important source of agate and carnelian during the period of the Roman Empire. Mention might also have been made of the Cambay bead trade and more detailed reference to Warmington's 'Commerce between the Roman Empire and India' and Arkell's Cambay and the Bead Trade, *Antiquity*, Sept., 1936, would have produced some interesting facts concerning the economics and daily life of the region, which have been rather neglected.

The Epigraphy and its dependent chapters, Administration and Society, are very well handled and indicate an immense amount of painstaking study. The appendices also should be of the greatest possible value in lightening and enlightening the labours of future students.

A few words may in conclusion be said about the book itself as such. The printing and general layout is excellent. The author has arranged his material most clearly, and the printer has not failed him in any way, would that one could say the same of the plates. Whoever conceived the idea of printing them in sepia instead of black and white has little knowledge of the prime factor of archaeological illustration, which is clarity. In most places the plates are so obscure that it is quite impossible to get a clear idea of the sculptural details, even when these are shown sufficiently large. One can only sympathize with the feelings of the author when he first saw the reproductions. Insult is, I feel, added to injury when the frontispiece, which in a way should set the standard for the whole book, is inserted upside down. The plans of temple architecture are of great value, but again the author is let down by the section of the Vav, or step-well at Vayad being printed upside down on Pl. III, a most puzzling thing even for one who, like the reviewer, is familiar with step-wells.

The author is to be congratulated on his distribution maps, which are invaluable for getting a clear picture of the material

which is being discussed, more topographical detail might, one feels, have been included without in any way obscuring the clarity of the information which the maps mean to convey. The Purna River moreover which is mentioned a number of times in the text is not to be found in any of the maps.

Speculation, one is glad to see, forms no part of Mr. Sankalia's exposition. He deals, very rightly, with facts and the reasonable interpretation to put on them. Such signs and wonders as the Prabhas Patan plate on which Mr. Pran Nath deciphered an inscription referring to Nebucadnezzar are mercifully absent. In fact, Mr. Sankalia is to be congratulated on a sound and scholarly piece of work, which we would like to see emulated to produce a series of similar regional archaeologies.

D. H. GORDON,



Studies in Burushaski Dialectology.

By SIDDRESHWAR VARMA.

(Communicated by Dr. S. K. Chatterji.)

In his stimulating article on 'A Burushaski Text from Hunza' (BSOS, Vol. IV, Part III, pp. 505-31), Lt. Col. D. L. R. Lorimer observes that the question whether the dialects spoken in Hunza and Nagar can be justly called separate dialects is one 'that requires further investigation' (p. 509).

This 'further investigation' was undertaken by the present writer. The results of his investigations, detailed in this paper, are as follows :—

- (1) The dialects of Hunza and Nagar are not separate, but closely allied.
- (2) The differences between them, however, are not 'superficial', but are historically important.
- (3) Phonologically and grammatically, the Nagari dialect preserves forms which are the relics of an older dialect, but in vocabulary, this dialect shows close contact with Shina, the vocabulary of Hunza showing fewer traces of Indo-European borrowings.
- (4) In order to reconstruct a comparatively primitive *gemein-Burushaski*, we therefore require the phonological and grammatical forms of Nagari, and the vocabulary of Hunza.

We shall now describe the distinctive features of Nagari and Hunza in Phonetics, Grammar and Vocabulary.

The following abbreviations may be noted :—Hu. = Hunza, N. = Nagari, Sh. = Shina, n. = neuter gender, aa. = active-animate gender.

I. PHONETICS.

The symbols of the *International Phonetic Association* have been used throughout the treatise. Of these symbols, the following may be particularly noted :—

ɛ soun is like e in English 'bed', but is closer.

ɛ sounds somewhat like French ɛ, but not so close.

The high-falling tone as in i 'he himself' and the low-rising tone as in ji 'his son' are marked as usual.

t and d are retroflex consonants, and are separate phonemes (cf. my article on *Burushaski Texts* in 'Indian Linguistics', Vol. I, parts V-VI, p. 11).

The phoneme g, a velar voiced fricative, has a large number of subordinate members, which vary according to position and with different speakers. Of these subordinate members, the following two may be mentioned :—

A uvular g, but more or less fricative (narrow transcription g) is often heard in the beginning of a word, as in Hu. gjon (broad transcription gjon) 'melon', N. gjaun.

Much more striking is a r-like sound, transcribed here as ɹ, pronounced much like the American r = ɹ, but often more like j. The interchange of g with r-like sounds has been noted by Jespersen (*Lehrbuch der Phonetik*, 4th Edition, pp. 49-50).

Generally speaking, g can never end a word. The sound at the end must be ɹ. Cf.

bʰɹɹ	'millet'.
dʰɹɹ	'fattened'.
lʰɹɹ	'cucumber'.

ɹ can never begin a word. The sound in the beginning must be g or g, which varies with individual speakers. Both the sounds g and ɹ are distinctly heard in the following :—

dɪmʰɛgɹɹɹs	'to itch'.
gɹɹɹɹɹ	'the bird called "Moa" in English'.
ɕhɪlgjuɹɹɹɹɹs	'to dilute or soften'.
ɹɹʰtɹɹɹɹs	'to plaster a house with mud'.
gɹɹɹ	'lame' but cf. gɹɹɹ 'partridge'.

Another striking feature of this ɹ is that it is much less voiced than g; sometimes it is heard like a devoiced g₀.

g' is an ejective recursive; it is accompanied with glottal closure, emission of breath with vibration (giving one the impression of an affricate or an 'incipient' fricative), and often low tone of the succeeding vowel. Cf.

g'iʰɹko	'Kashmir'.
g'ɹɹɹɹ	'ladle'.
g'ɹɹs	'to put in, insert, enter'.

(1) Contractions in Hunza.

The phonetic system of Hunza indicates it to be pre-eminently a dialect of contractions, and shows that Nagari has

preserved the relics of older forms. Cf. the following forms of the verb *etēs* 'to do' in the Present Indefinite tense :—

	<i>N.</i>	<i>Hu.</i>
'I do'	je 'eɕaba	je 'eɕaba
'thou dost'	um 'eɕuba	uŋ e'ca
'he does'	mə 'eɕubəi	'mɛ e'ɕai
'we do'	mi 'eɕaban	mi 'eɕaban
'you do'	ma 'eɕuban	ma e'can
'they do'	u 'eɕuban	u e'can

Cf. also Past Continuous :—

	<i>N.</i>	<i>Hu.</i>
'I had been doing'	ja 'eɕabajəm	ja 'eɕabajəm
'thou hadst been doing'	'umɛ 'eɕubam	'uŋɛ e'cam
'he had been doing'	'mɛ 'eɕubam	'mɛ e'cam
'we had been doing'	mi 'eɕabam	mi 'eɕabam
'you had been doing'	ma 'eɕubam	ma e'cam
'they had been doing'	u 'eɕubam	u e'cam

This syncopation in Hunza gives a diversity of meaning with diversity of stress-accent. Cf.

	<i>Hu.</i>	<i>N.</i>
'I shall do'	'eɕəm	'eɕəm
'he had been doing'	e'cam	'eɕubam
'I brought'	'dɪɕəm	'dɪɕəm
'he had brought'	dr'eɕam	'dɪɕubam
'I did'	'eɕəm	'eɕəm
'he had done'	e'tam	'eɕubam
'I cooked'	dɛɕɛɪrəm	dɛɕɛɪrəm
'he had cooked'	dɛɕɛɪ'ram	dɛɕɛɪrubam

There is a similar syncopation in the Neuter Pres. Indef. tense :—

	<i>N.</i>	<i>Hu.</i>
'it comes'	'juɕɪbr'la	'juɕɪla

Compare the following examples of syncopation :—

	<i>N.</i>	<i>Hu.</i>
gauhar'a	'a cradle'	gaɟura
'ulum ha	'inner apartment'	'ula
dusù	'bring'	sù
kɪŋkiki	'name of a bird of prey'	kiki

<i>N.</i>		<i>Hu.</i>
shlshlētēs	'to entirely screen from view'	'shhshlētās
nīṣ	'having seen'	nīēm
nu'hulja	'having mounted'	nuylja
'shīgr	'a she-goat'	shijr
ōlteik	'both of them'	ōltik
ciḍto	'the third day after the day- after-tomorrow'	cilto
mrusm'daro	'our wives'	mijsm'daro
ə'manṣa	'I may be'	emḷṣa
gu'manṣ	'thou mayest be'	gu'mḷṣ
dēlṣa	'I may beat'	dēlṣ
dēlṣ	'thou mayest beat'	dēlṣ
brum (aa)	'they were'	bim

Of particular interest are the Hunza contractions in *Negation*, which will be discussed under Grammar. In *N.* the uniform prefix for Negation is *au-*, in *Hu.* this *au-* has undergone many complicated changes. Cf.

<i>N.</i>		<i>Hu.</i>
'aud'ae'lam	'I did not hear'	et'qjelam
'aujeṣam	'I did not see'	'eiṣam
'aujeṣaba	'I do not see'	'eiṣaba
'audəkōjel	'do not listen'	et'ukkujel
'auju	'do not give'	eu
'auṣi	'do not eat'	'eṣi
'auni	'do not go'	oṇi
aujo'goibam	'would not give'	ej.guibam
auwəqholṣbi	'does not pain'	'ajəqulṣbi

Vowels.

Parallel to this tendency to contractions, Hunza vowels show monophthongs where Nagari has diphthongs. Cf.

<i>N.</i>		<i>Hu.</i>
tēiler	'thither'	tējler
'tēilum	'from there'	tējlum
tarqēi	'a wave'	tareqej
grūskus	'widow'	g'e.skus
aujer	'my husband'	ojjer
'aulji	'my dream'	ojji

<i>N.</i>		<i>Hu.</i>
'aulus	'my (woman's) brother'	ojlus
'aumus	'tears' (from eyes)	ojmus
'aumus	'tongue'	ojmus
'auri	'nail' (of finger)	ojri
aus	'my wife'	ojs
'autis	'my foot'	ojtis
'aufo	'guest'	ojfo
daujn	'scarf'	dojn
gaujn	'melon'	gojn
thaujn	'fresh coriander'	thojn
gaujjes	'to pick up'	gojjes
jauj	'give to me'	joj

Some of the examples of this *Hu.* monophthongization in Negation have been already given. Cf.

<i>N.</i>		<i>Hu.</i>
ausen	'do not speak'	ojsen
'ausiçaba	'I do not eat'	ojçaba

Absence of nasality in some of the Hunza words is another distinctive feature of the dialect. Whether it is a case of denasalization in *Hu.*, it is difficult to say. Cf.

<i>N.</i>		<i>Hu.</i>
hēs	'a sigh'	hiş
mājʃ	'massage'	majʃ
ph`ñso	'hollow'	phuş

A number of words in *N.* has a final -u where *Hu.* has O. Cf.

<i>N.</i>		<i>Hu.</i>
'açu	'my brother'	'aço
'hipultu	'day after tomorrow'	'hipulto
'hunzu	'Hunza'	'hunzo
khùltu	'to-day'	khùlto
mujtu	'now'	mujto
'fukru	'Friday'	'fukro
-ulu	'in'	-ulo
'dīçu	'bring'	'dīço
'eşu	'tell'	'eşo

This tendency to final -u in N. finds a parallel in Shina. Cf.

Sh.	matũ	'brain'	N. Hu.	'mato
	dulu	'string'		
	danu	'bow for arrows'		

In many instances, especially in unstressed position, N. has the vowel ɔ where Hu. shows u. Even this variation may be a historical weakening in the case of Hu. u. Cf.

N.		Hu.
dəgoi	'noon'	dugui
dərò	'work'	durò
mə'nətt	'a child insured against a fall by animal sacrifice'	mənutt
gəs'ki	'freshly kneaded dough'	gus'ki
'lətə'tas	'to frown'	'lutə'tas
ʃən	'blind'	ʃun

(In N. ʃun means 'vine')

The following vowel-correspondences, not yet confirmed by a sufficient number of examples to show any tendencies in the dialects, may be of value for future research :—

N.		Hu.
jəɪ	'flour-mill'	jaɪ
'zɛilɛka	'to walk well'	zailɛka
gu'ɕharəs		gu'ɕharəs
		'to strut'
ma'jut	'mosque'	ma'jɪt
gu'rɛs	'dung'	gu'rɛs
(r'qhətt) 'tʰaɕqɛ'tas	'to smack the lips' (at a pleasant taste)	'tʰaɕqɛ'tas
dojnəs	'to catch'	dujnəs
'gari	'eyeball'	gɛjri
əŋɛ	'beard'	əŋi
bə'urum	'how much'	b'ɛrum
ca'qariʃo	'pus from the eyes'	ciqqrɪʃ

Consonants.

For a medial aspirated plosive in N., Hu. has generally a non-aspirated plosive, and in the light of the above-mentioned facts, it may be probably a case of deaspiration, and therefore a later stage, in the case of Hunza plosives. Cf.

	<i>N.</i>		<i>Hu.</i>
	'althar	'twenty'	'altar
	'baəhm	'leg'	'baəm
	'əphat	'side'	'əpat
	k h ə 'k h ʌ c ɪ	'to stutter'	g ə 'k ʌ c ɪ
	imənas		imənas
	jaʈʈhəl	'deer'	jaʈʈəl
	'lotʈhur	'ball'	'lotʈur
	məph'ər	'old person'	məp'ər
	'dɛçɛnas	'to require'	'dɛçɛnas
	dɛçɛhɪrəs	'to cook'	dɛçɛrəs
	dɛçɪəs	'to press, to be sullen'	dɛçɪəs
	'dɛqqhulənas	'to knead'	'dɛqqulənas
	d'ɛ.mathəlas	'to yawn'	d'ɛ.matəlas
	'dɪçɛhɪɣɪnas	'to hang'	'dɪçɛɣɪnas
	dɪkʰəʈas	'to be entangled'	dɪkəʈas
	'dɪnçɪras	'to spread' (as a carpet)	'dɪnçɪras
	'dɪpɪrçəs	'to be uprooted'	'dɪpɪrçəs
	'dɪthəlas	'to wake'	dɪtəlas
	du'kukkʰuʈas	'to become lean'	du'kukkʰuʈas
	'ɛlthələnas	'to turn the side of bread' (in baking)	'ɛltələnas
	ɛ'pphɪlənas	'to flatter'	ɛ'ppɪlənas
	'ɛçɪəs	'to press'	'ɛçɪəs
	ɛsthəjas	'to extinguish'	'ɛstəjas
	'ɛ.thɪras	'to show'	'ɛ.ltɪras
	ɪjɪkʰɪnas	'to beseech'	ɪjɪkɪnas
(gəɲɛ)	khukʰòrəs	'to plane, prepare' (as an axle of wheel)	kukòrəs
	'ɛ.guʂarəs	'to make one go'	'ɛ.gu'çarəs
	ɛs'ɛ.phənas	'to irritate'	ɛs'ɛ.pənas
	'ɛ.çumi	'sent'	'ɛ.çumi
	'ɛ.ɪkʰɪnas	'to teach'	'ɛ.ɪkɪnas
(Negation)	'auma'kharəɲɪ	'do not delay'	ə'makəɾəɲɪ
(conj. part.)	'mɪchi	'having given'	'nɪɪm
(conj. part.)	nu'kuçər	'having gone'	nu'kuçər

In the beginning of words, however, Hunza seems to have a greater tendency for aspirated consonants in loan-words. Cf.

<i>Hu.</i>		<i>N.</i>
'phərda	'created'	'pərda
'phulɾs	'policeman'	'pulɾs
khòt	'coat'	kòt

The reverse phenomenon may be noticed in the following words. It is not known whether these words are loans. Cf.

<i>Hu.</i>		<i>N.</i>
qa'tɛɲɛ	'sword'	qhatɛɲɛ
tɒ'riŋ	'vessel to churn milk'	thɒ'riŋ
ɬakojmən'as	'lean against or upon'	ɬhakojmən'as

Perhaps the above differences are only local—a matter for future investigation.

Immediately after the *negative* prefix, the voiced consonant in *Hu.* is invariably devocalized, in *N.* it remains intact. Cf.

<i>N.</i>		<i>Hu.</i>
ɒɟù	'do not come'	ɒɟù
'ɒubɛɭ	'do not wear'	ɒ'pɛɭ
'ɒudìmi	'he did not come'	ətìmi
'ɒudukòma	'thou didst not come'	ə'tukkuma
'ɒudukògəs	'do not laugh'	ə'tugugəs
'ɒugaribi	'does not ring'	ɒ'qaribi
'ɒugasɪsən	'they may not laugh'	ɒ'qasɪsən

The above variations in negation are historically important taking us to the apparently earlier forms in *N.*

There occurs in *N.* a curious divergence from *Hu.* It consists in the absence of an intervocalic *ŋ*, which *Hunza* has. But in the case of *N.*, it may or may not be a reverse case of syncopation. It may indicate the greater aversion of *Hu.* to pure nasalization. Cf.

<i>N.</i>		<i>Hu.</i>
jɛ'ɪmʊɛ (sg. jɛ'ɪ)	'flour-mills'	jɒ'ɪŋʊɛ (sg. jɒ'ɪŋ)
hɪɒɪ	'doors'	hɪŋɒɪ
khɪɒɪ	'sides of the face'	khɪŋɒɪn
ru'ɒnɛ	'pasture-lands'	ru'ŋɒnɛ
guʃɪɒnɛ	'women'	guʃɪŋɒnɛ
tɪ'ɒjo	'eggs'	tɪŋɒjo

The following variations among the final nasals may be noted :—

<i>N.</i>		<i>Hu.</i>
um	'thou'	un or uŋ
ɖuɣm	'a little'	ɖuɣŋ
but phin	'foam'	phim

In the following words an initial *g* in *N.* corresponds to *k* in *Hu.*, while a medial *g* corresponds to *q* :—

<i>N.</i>		<i>Hu.</i>
garũJo	'the bird called "Moa" in English'	karũJo
gu'tul	'a large wooden basket plastered with mud'	ku'tul
but ga'teŋɕ ¹	'sword'	qa'teŋɕ
or qha'teŋɕ		
'diɕɛɣɣɪnas	'to hang'	'diɕɛɣɣɪnas
s'a-ichògoriŋ	'twilight'	s'a-i'chlaqariŋ
'ɛcogun	'younger'	'ɛcuqun
'aʊgasɪsɛn ²	'they may not laugh'	ʌ'qasɪsɛn
'aʊgaribi	'does not ring'	ʌ'qaribi

In the following examples, a final *ɛ* in *N.* corresponds to *a* in *H.*, while a medial *ɛ* corresponds to *t* :—

<i>N.</i>		<i>Hu.</i>
'garkʌɛ	'lizard'	'garkas
bəʌɛ	'bird'	bəʌs
but ʌl'tʌɛ	'two' (aa.)	'ʌlta
'dɛɕəʌʌs	'to awaken'	'dɛstəʌs
ɣɪɕəʌ	'leavened bread'	ɣɪɕta
dɛɕəʌʌs	'to support'	'dɛstəʌʌs

The following variations cannot, for the present, establish any general result. They may be mere local variations. But the collection of the material may be of ultimate bearing on dialectical geography.

¹ This word has many pronunciations. It may be a loan-word.

² Cf. above, p. 140.

<i>N.</i>		<i>Hu.</i>
'gurgus	' breeze '	'gurkus
kr'tap	' book '	gr'tap
qhΛ'qhΛs	' paper '	gΔ'kΛs
kəg'as	' cotton '	gu'pas

We have *N.* l = *Hu.* r in

<i>N.</i>		<i>Hu.</i>
ʃΔl	' a pit '	sΔr
ḍΔŋ ləθΛs	' female goblin '	ḍΔŋ rəθΛs
br'лаго	' colt '	br'rago
but tur br'ʃΔjes	' to break into a house '	

In the following two examples l is lost before a plosive in *N.* :—

<i>N.</i>		<i>Hu.</i>
ʼε.thiɾΛs	' to show '	ʼε.ltiɾΛs
dəʃΔba	' I strike '	dəʃΔba

N. ʃ corresponds to *Hu.* s in the following :—

<i>N.</i>		<i>Hu.</i>
ʼaʃkɪl	' face '	ʼaʃkɪl
məʃ	' flood '	məs
bəʃən	' what '	'bəʃɪkrən ' of what kind '

N. m corresponds to *Hu.* b in the following :—

<i>N.</i>		<i>Hu.</i>
m`an ɛ'tas	' to kiss '	b`an ɛ'tas
maskəij	' name of a grass fatal to cattle '	baskuj
'minis	' ball of dough '	'bonis
'nimatε	' on reaching '	'nrɪatε
m = p in miʃq`ε.təs	' to make a "puj puj" sound with the lips '	piʃq`ε.təs

Most doubtful is the value of the following consonantal alternations, which I have noticed either in isolated instances or in conflicting forms :—

<i>N.</i>		<i>Hu.</i>
b`arʃΛko	' red ' pl.	b`arcuko
ʃki	' a nit '	ɕki

N.		Hu.
ɾ'kan	'latchets of the rough shoe called tɔ'ʊɕ'	qɾ'kan
mut	'fist'	muɕ
'ɖapɔ	'bundle'	'japɔ
ɟad'jare'tas	'to worry'	ɟar'jare'tas
d'ɛ.səɭas	'to vilify'	d'ɛ.ʂəɭas
cu'kanɟ	'lavatory'	ju'kanɟ
'papəɭas	'to seethe or boil'	bapəɭas 'to be invisible'
phaltɔɕ	'strip of cloth to wrap round the legs in winter'	'phatɪ (perhaps a loan-word from Indo-Aryan)
therk	'dirt'	ther
briù	'rice'	bras
Sh. briù		
də'tagar	'fever'	tə'tagar
dɪ'ɔ	'is'	bɪ'ɔ

II. GRAMMAR.

Nominal declension.

While conjugation in Burushaski Grammar is very complicated, nominal declension is very simple. Cases are generally formed by the addition of post-positions.

The only cases which are declined are the genitive and the agent cases, both of which end in ɛ. A sentence like

batʃa wəzɪr ɛ.rimi

'The king sent the Wazir' reminds one of the simplicity of English Grammar.¹

Nominal declension does not present any striking variations between the two dialects. In plural formation the differences noted are only phonetic. Cf.

N.		Hu.
Sg. gus, pl. guʃianɛ ²	'women'	guʃɪanɛ
Sg. ɔʊs, pl. mɾʊsm'daro ³	'our wives'	mɪʃɪn'daro
(Hu. oʃs)		
Sg. ij, pl. i'juɔ	'sons'	ju

¹ Cf. my article on Burushaski Texts in *Indian Linguistics*, Vol. I, part 3, p. 20.

² Cf. p. 140.

³ Cf. p. 140.

Pronouns.

In the forms of the pronouns there is considerable phonetic diversity. Cf.

<i>N.</i>		<i>Hu.</i>
um		un, uŋ
'khutɛ, n.	'this' (near)	'gutɛ, n.
'khukɛ, n. pl.	'these' (near)	'gukɛ, n. pl.
'khutɛ, aa.	'this' (near)	'gutɛ, n.
'khutɛ, aa. pl.	'these' (near)	'gutɛ, aa. pl.
'ɛtɛ, n.	'that' or 'this' (distant)	'itɛ, n.
'ɛkɛ, n. pl.	'those' or 'these' (distant)	'ikɛ, n. pl.
'ɛsɛ, aa.	'that' or 'this' (distant)	'isɛ, aa.
'ɛkɛ, aa. pl.	'those' or 'these' (distant)	'ikɛ, aa.

Verb.

In the verb, the verb substantive (with its forms as auxiliary), negation, and the conjunctive participle present notable variations.

In the verb substantive diversity exists in the forms of the n. sg. and aa. pl. Cf.

<i>N.</i>		<i>Hu.</i>
drɪ'a	'is'	brɪ'a
drɪ'lum	'was'	brɪ'lum
bi'o, aa. pl.	'are'	brɪ'ɛn } aa. pl.
		or biɛ }
bɪum, aa. pl.	'were'	bɪm
umaimio, aa. pl.	'they will be'	umaimɪ'ɛn }
		or umaimɪ'ɛ }

The combination of the verb substantive as auxiliary with other verbs (so as to form the various tenses) leads to contractions in Hunza, which have been already described above (p. 135). Cf.

<i>N.</i>		<i>Hu.</i>
'ɛcuba	'thou dost'	ɛ'ca
'ɛtubam	'he had done'	ɛ'tam
'ɛcubam	'he had been doing'	ɛ'cam

Negation.

The Phonetic peculiarities of negation in Hunza have been already given above (pp. 139, 140). The variety of initials in

Hunza negation, closely related as they are with pronominal prefixes, offers an interesting field for investigation into the original and intermediate forms of these prefixes. The following table shows the various forms of initials in negation:—

	N.	Hu.
Object as 1st pers. sg.	auə—	aje— < * $\Delta + u + e$ u dropped, j as glide
„ „ „ „ pl.	'aumr—	'amr— < * $\Delta + u + mi$
„ „ 2nd „ sg.	'augu—	'aku— < * $\Delta + u + gu$
„ „ „ „ pl.	'aumə—	'amu— < * $\Delta + u + mu$
„ „ 3rd „ sg.	au—	ej— < * $\Delta + u + i$
„ „ „ „ pl.	au—	oj— < * $\Delta + u + u$ (the u of the original au has been dropped in Hu.)

The following conjugation of dēləs 'to beat' in the negative past tense will give an idea of the difference between the dialects:—

	N.	Hu.
'he does not beat me'	'inə ʒe 'auədəʒubəi	'inə ʒe 'ʌjədɪlʒəi
' „ „ „ „ us'	'inə mi 'aumr'dəʒubəi	'inə mi 'amɪdɪlʒəi
' „ „ „ „ thee'	'inə um 'augu'dəʒubəi	'inə uŋ 'akudɪlʒəi
' „ „ „ „ you'	'inə ma 'aumədəʒubəi	'inə ma 'amedɪlʒəi
' „ „ „ „ him'	'inə khm 'auədəʒubəi	'inə khm ejdɪlʒəi
' „ „ „ „ them'	'inə u 'audəʒubəi	'inə u ojɪlʒəi

Also cf.

N.	Hu.
'auʃɪʈabɪ	'I do not eat it' ejʃɪʈabɪ

For further examples, see above, p. 136, and for the devocalization of the consonant immediately after the negative prefix, see p. 140.

The potential compound verb with the 'can'-sense is formed by the auxiliary 'ulanəs 'to be able' in N., but mən'as 'to be' in Hu. Cf.

N.	Hu.
ʒe 'etɪʃu ʌjəba	'I can do' ʒe 'etɪʃ'amaʌjəba
ʒe 'etɪʃauʌjəba	'I cannot do' ʒe 'etɪʃej'amaʌjəba

In the optative mood, N. has ɪ before ʃ; in Hu. it is often lost. Cf.

N.		Hu.
je ə'maniʃa	'I may become'	ə'māʃa
um gu'maniʃ	'thou mayest become'	gu'māʃ
je dəliʃa	'I may beat'	dəliʃ

The conditional, which signifies unfulfilled condition, is formed in N. by the addition of -əum to the future; in Hu. by the addition of -əe. Cf.

N.	səbur	ja	in	dəjəməum,	in	djùasimi
	yesterday	I	him	would have beaten	he	escaped
Hu.	sajti	ja	in	dəljəməe,	in	djùasimi
	(yesterday)					

'I would have beaten him yesterday, but he escaped.'

Similarly cf.

N.		Hu.
'əcəməum	'I would have done'	'əcəməe
'nīcəməum	'I would have gone'	'nīcəməe
'aməjaməum	'I would have become'	'aməjaməe

The imperative mood has -u ending in N. where Hu. has -o. Cf.

N.		Hu.
'əsu	'tell'	'əso
'diəu	'bring'	'diəo

cf. p. 137.

This mood also shows loss of the prefix də- in Hu. Cf.

N.		Hu.
dusù	'bring'	sù
də'sokk	'get down'	sokk
dəchi	'give me'	əchi

The causative shows deaspiration in Hu., where N. has the aspirate. Cf.

N.		Hu.
ʼε.gu'charəs	'to make one go'	ʼε.ku'əarəs

For further examples, *vide* p. 139.

Particularly notable are the variations in the *conjunctive participle* in these dialects:

The Hu. conj. part. has a -n ending, N. is without it. Cf.

		<i>N. conj. part.</i>	<i>Hu. conj. part.</i>
	dəgajəs	'to be hidden'	nu'taga nu'tagen
	d'a.gəsəs	'to laugh'	d'a.gəs d'a.gəsın
	'dɛʃəjas	'to hinder'	'dɛʃa dɛʃən
	dijləs	'to be wet'	dijl dijln
N.	dojnəs	'to catch'	dojn dujnn
Hu.	dunjəs		
	du'asəs (pl.)	'to come out'	du'afə du'afın
	du'sujəs	'to bring'	dusù du'sun
	əsəs	'to tell'	'nɛsu 'nɛsun
	ɛtəs	'to do'	'nɛti nɛtən
	'ɛ.ləs	'to prick'	n'ɛ.li n'ɛ.liu
	'ɛ.stəgəjas	'to conceal'	n'ɛ.stəga n'ɛ.stəqən
	ijləs	'to plunge'	nıl nılın
	jəjəs	'to cling to'	'nija nijən
	jəjəs	'to meet'	'niɛɛ niɛm
	jujjəs	'to give'	njù njùn
or	juj : jəs	'to be dry'	njù njùn
	juj : əs		
	jujʃəjas	'to breed'	njùʃa njùʃən
	jùəs	'to come'	dì dìn
	ganəs	'to carry'	'nuka nu'kan
N.	gaujjəs	'to pick up'	nukaù nukònın
Hu.	gojjəs		
	gr'ejəs	'to enter in large number'	nɾ'kija nɾ'kiən
	gr'fəjəs	'to weave'	nɾ'kɪʃa nɾ'kɪʃən
	g'i : əs	'to put in'	nɾ'ki nɾ'kin
	nies	'to go'	nì nìn
	fejəs	'to eat'	nu'fɛ nu'fən

(2) The deaspiration of the consonant in Hunza after the conj. part. prefix has been already illustrated in 'nɛm, 'having given', nu'kuəɾ 'having gone' on p. 139. Cf.

		<i>N.</i>	<i>Hu.</i>
ɕhujəs	'to take away'	'nɛhu	'nɛsun
'dɛɕhiəs	'to press'	'dɛɕhi	'dɛɕm
'ɛɕhiəs	'to press'	'nɛɕhi	'nɛɕm
gu'ɕhejəs	'to sleep'	nu'kucha	nu'kucən
gu'ɕhərəs	'to go'	nu'kuəɾ	nu'kuəɾ
r'ɕhiəs	'to give'	'nɛchi	'nɛm

		N.	Hu.
r'khaciəs	'to shut in'	'nikhaci	'nikacin
r'qhərəs	'to break'	nıqher	nıqer
kha'tanas	'to delay'	'nikheran	'nikeran

(3) This -n does not occur as conj. part. ending under the following conditions :—

(a) When the root already ends in -n, cf.

		N.	Hu.
guj'suginas	'to consult'	nu'kuşigin	nu'kuşkin
gıjrmınas	'to write'	nı'kırmın	nı'kırmın
r'şharkənas	'to cudgel'	'nışharkən	'nışarkən
ımənas	'to become'	'nıma	nımən
sənəs	'to say'	'nuse	nu'sən

The last two forms are irregular in N., but the corresponding Hu. forms are quite regular.

An exception to this heading is dojnəs (N.), Hu. dujnəs, which in Hunza has the conj. part. dujnm.

(b) When the verb has the prefix ı or dı. Cf.

		N.	Hu.
r'qhələs	'to ache'	'nıqhul	'nıqul
r'phaltəs	'to be injured'	nı'phalt	'nıpalt
dı'khrıas	'to decrease'	'dıkhrı	'dıkır

(4) The following unusual forms can be explained by Vowel Harmony :—

(a) N. nı'mm 'having drunk'

(b) Hu. nujjöl sg. 'having put on (a coat)'.

(a) In N. şhil nı'mın 'having drunk water' we had expected nu'mın, because it is a general rule in both the dialects that the conjunctive participle of a neuter verb is formed by prefixing nu- to the root, whether the object of the verb is sg. or pl., cf.

	N.		Hu.
nu'fe	'having eaten'		nu'şen
'nuka	'having carried'		nu'kan

So we had expected nu'mm from the neuter verb mın'as 'to drink' and thus the Hunza form nu'mm might seem to be regular. But phonetically the Nagari form nı'mm is more regular, for neuter roots with i or ı take the prefix nı in both the dialects. Cf. the conj. part. of

		N.	Hu.
gijrminas	'to write'	ni'kirmin	ni'kirmin
g'i:əs	'to put in'	ni'ki	ni'kim

(b) The explanation of *nujjöl* as being due to vowel harmony has been already given in the present writer's article on *Burushaski Texts* in 'Indian Linguistics', Vol. I, part 3, pages 24, 25.

The following forms of the conj. part. in Hunza are irregular:—

		N.	Hu.
du'gues	'to fasten or tighten'	'nidugu sg.	'dugun
	(as with a key)	'nudugu pl.	
diçəs	'to bring'	'diçu	'niçun
thajəs	'to be extinguished'	nu'tha	nu'tha
thies	'to pour'	nu'thi	nu'thm

In the last example we had expected a deaspiration of *th*, as in 'niçm 'having given'.

Adjective formation in both the dialects does not show any variation, the normal adjectival ending being *-um*, as in 'matum 'black'; bujrum, 'white'. Cf., however, the alternation *ç:l* in the structure of the following ordinal number:—

Hu.		N.
th`a.ətəm	'hundredth'	th`aulum

The N. form is here regular, as in both the dialects *-ulum* is the normal ordinal ending, though the initial *u* in Hu. is generally dropped, cf.

N.		Hu.
'waltjulūm	'fourth'	'waltilūm
mr'fmdjulūm	'fifth'	mr'fmdilūm

Hu. *th`a.ətəm* is therefore irregular.

Some *Adverbs* in N. end in *-i*, where we have *o* or *u* in Hu., e.g.

N.		Hu.
'kuli	'even'	'kulu
'amuli	'where'	'amulo
'amulm	'whence'	'amlum

III. VOCABULARY.

A glance through the standard list of words and sentences given in the Appendix may lead the reader to suppose that the

so-called 'dialects' are only phases of one and the same dialect, there being few differences among the words given except a little difference in pronunciation here and there.

But as I pointed out in a printed circular to the Linguistic Society of India (Sept. 6, 1930), the key-words and phrases in the L.S.I. are not of much value for inter-dialectical research. Those key-words are of a generic type and may be nearly identical among several dialects with a common culture.

Shibboleths.

In my investigation of the Hunza and the Nagari dialects I examined a number of informants, some of them quite old and with a keen observation of linguistic variations. I collected the following shibboleths from them, shibboleths which they said had often come to their notice and had been talked about as differentiating the Hunza from the Nagari dialect :—

<i>Hu.</i>		<i>N.</i>
ga'ʃɪl	'firewood'	'cuni
charbʌjo	'upper hips' (human)	ca'raʃɪfo
'gugundɪl	'dove'	kùʈi
darògu	'stick'	kunʌ
ɛʈɪʃʌmajəba	'I can do'	'ɛʈɪʃulajəba
ju'ar	'war'	birgʌ
		Sh. bīrgā

Dialects, in which differences like the above occur, cannot, without extraordinary reasons, be supposed to be identical. As regards the directions in which differences in vocabulary occur, it will be noted that most of the words relating to the human body, the human relations and the numerals—the hackneyed test of philologists—are almost identical,—indicating a common origin and a common culture. But striking differences occur in words relating to the Forest and agricultural life, utensils and instruments, and natural and physical phenomena.

A striking feature of the Vocabulary is the poverty of adjectives and abstract terms. For such a concept as 'fruitful', the dialects have

buʈ ujaɪbi	'it carries a great deal'
buʈ u'janəs təm dɪʌ	'the tree is carrying a great deal'

There is no word for 'height'. For 'what is its height?' the only available idiom is 'how high is it?'

'khuse baʌurum thʌnum bi

But the dialects are very rich in 'Enumerative idiom' (cf. my article on *Burushaski Texts* in 'Indian Linguistics',

Vol. I, part 3, p. 28), in which minute details of actions have separate words as in Mundā,—Hunza, in this respect, being richer than Nagari. The following directions of variations in vocabulary, then, may be indicated—:

(1) *Words relating to forest and agricultural life.*

<i>Hu.</i>		<i>N.</i>
edap	'harvest'	on Sh. on 'grain'
ba'gundo	'yeast'	'ışkur
beṭajsm	'apricot-pickles'	ʃut
bijsqa'galgu	'centipede'	galājnə or kal'tas Sh. gālāc
bo'gondo	'maize-bread'	tol'toppo Sh. tō'təri
buc	'male-goat for propagation'	'chula
buajltarə	'cowherd'	hu'jeltarə { for both 'cowherd' and 'shepherd'. In Hu. it means 'shepherd' only
buajsuruŋ	'cow-house' (for winter)	} tark
buajhər'aɪ	'cowhouse' (for summer)	
dir	'boundary'	dir Sh. dir
carì	'cricket' (insect)	ʃu'fui
'chare-bag	'a small inaccessible dense forest on mountain'	'chare-'tapi
chrlər'qal	'the large wasp'	məch'ari
çim'ili	'a tiny crust of stone or wood'	ɣipini
'galıŋ	'precipice with constructed steps'	kapr'nıʃo
'gıkın	'small bundle of wood'	'tə'pi
gun-'holenas	'the bat' (night's)	} ta'tapel Sh. tatāpan
er'brto	'the bat' (day's)	
gus-huk	'bitch'	sōçi-huk Sh. sōçi 'female'
guṭi	'cottage'	'dukuri
ga'jıl	'firewood'	'cuni

<i>Hu.</i>		<i>N.</i>
gr'dɪŋmamù	'raw milk'	'iəmo mamù
'gugundɪl	'dove'	kùti
		Sh. koʈi kunūl
gu'ruk	'stone'	da'jək
gus	'clod of earth'	phɪp'dɪl
hal	'fox'	lō'i
		Sh. lō'i
hal'den	'goat'	ʒet
h'as	'walnut-kernel'	khekhai
		Sh. khakāi
		'green walnut'
'holenas	'moth'	phɪ'ran (In Hu. it means 'spider')
		br'tan
'holenas	'butterfly'	'ʃautɪr
'huco cukotəs ust'at	'shoemaker' lit. expert in sewing shoe	Sh. shotó
r'phulgo	'hump of cattle'	mojto
'khiʒo	'mosquito'	'phɪɕo
		Sh. <u>phɪɕu</u>
pəʈajɪŋ	'apricot-pickles' cf. bəʈajɪm above	ʃut
phɪ'lal	'wild mint'	gur'muphɪ'lal
phɪ'ran	'spider'	'tələbuɖo
		Sh. təlbūɾu
'phɪrəne'phaskɪɕaŋ	'spider's web'	'tələbuɖophɪ'lam
'phuteʃu'tukumuɕ	'mushroom' (umbrella- or 'pharəmuɕ form) lit. 'ghost's buds or caps'	'ʃutɾe
ri'mɪzɪl	'civet'	mi'ɕhɪr
		Sh. <u>mɪtshɪr</u>
sar'muɕ	'large skin-bag'	mɛjɪs
su'putt	'horse's dung'	baɕɛ'i
		{ this is the com- mon word for animal dung in general in both the dialects
'sake'tas	'to massage a horse'	'qaqərd'ɛ.təs
təgu'li	'male sheep' (young)	} kər'ɛ.lo
	'male sheep' (grown-up)	

(2) *Words relating to utensils and instruments.*

<i>Hu.</i>		<i>N.</i>
'asumbalk	'a wooden contrivance which directs the speed of a flour-mill'	cì
'aški	'pillow'	o'nokis Sh. <u>onokis</u> 'cushion for chair'
etaf'gir	'tongs'	'cappi
'chukus	'bow-string'	gun
'dagu	'glue'	daujk Sh. <u>dök</u>
dam'bur	'large wooden basket plastered with mud'	gu'tul
'hanik	'basket for bread'	thaljò
hars'cum	'the yoke of a plough'	as'cum
hr'kin	'ear-ring'	'magun
g'ralt	'ladle'	dòri
ke'dakus	'stocks for punishment'	sarikus
'khaci	'pail'	'paṇḍa
kha'was	'leather-bag fitted with strap'	borokoj
jujn	'rug'	'khama
pul'tunis	'bellows'	pho'ʃon
pur'elo	'flute'	ga'bi
tu'tur	'whip or scourge'	ʃi'kan
'thaṭakus	'a constantly moving wooden contrivance in a flour-mill'	ka'deki

(3) *Words relating to natural and physical phenomena.*

<i>Hu.</i>		<i>N.</i>
chil heralt	'thin cloud'	burgajl 'cloud, mist' Sh. <u>bürgāl</u>
'ogur	'thick cloud'	
bu'rupç	'white cloud'	
	(there being no special word for a 'cloud')	
'dambu	'bubble'	'hare 'ilem (lit. 'stream's eye')
gamùej.alı	'sleet'	'isqal
hien	'hail'	garajl

<i>Hu.</i>		<i>N.</i>
'nironaŋ	'rainbow'	biʝoŋ Sh. <u>bīzón</u>
tis'qan	'earthquake'	bū'jal Sh. <u>būjā'l</u>
titrīs	'spark'	jurʝuji Sh. <u>curʝúi</u>

(4) *Words relating to time.*

<i>Hu.</i>		<i>N.</i>
'jimale	'tomorrow'	jum'den
sɔʝti	'yesterday'	səbur
'sasatumo	'evening's'	'jamo
poŋ	'age'	den 'year'

(5) *Words relating to the human body.*

<i>Hu.</i>		<i>N.</i>
əwaʃ am'en	'jaw'	'khalduŋ am'en
charb'ajo	'upper hips'	ə'rakiʃo
kərɛŋi	'ear-hole'	al'tumalephus or go'mor
salet	'moustache'	phūʝi
mar'muken	'handful'	hikmuçen
'phareʃ	'a scar'	gaʝl
hiq'ɛ.təs	'to hiccough'	ku'duk mən'as
ʃan'tər	'squint'	'təro Sh. <u>tēre açhiye</u>
r'ʃipm	'child's penis'	'euro
'šawa'dito	'mad'	'phutkiş
ə'charliş mən'as	'to be hoarse'	əchar'qhareʃas
'hupe'tas	'to drink with a noise'	suʝke'tas
('ʃoto) 'phitık'ɛ.təs	'to open a small wound'	ɛar'ɛ.təs
(ʃoqq) ɛar'ɛ.təs	'to open a large wound'	{ (for both meanings)
'çare'tas	'to pass fluid stools'	'tıtıre'tas

(6) *Words relating to various actions.*

<i>Hu.</i>		<i>N.</i>
aqə'ərə janəs	'to carry a child on one's side'	'hapa janəs

<i>Hu.</i>		<i>N.</i>
bijskinas	'to beg'	du'marəs (this word occurs in both the dialects)
'hani 'braqqotəs	'to break apricot-kernel'	('hani)u'qharəs
'chilpupurotəs	'to rub or press with hands', as dough	mu'murməç otəs
dal'dinas	'to unhusk'	de'damətas
dal dije	'arise'	'hartmarəç
'digiɽas	'to cut and lay in heaps'	No parallel word available
(həralt) di'arçəs	'to rain'	jʉəs
də'qhokkuɽəs	'to be tangled'	gaɽwələs <u>galatɔ'iki</u>
də.jənəs	'to prick'	'ɛ.ləs
(ha) dojrəs	'to fall' (said of a horse)	gar mən'as
dojrəs	'to fall' (said of snow)	ʃaq mən'as
'dangə'tas	'to bake'	'dirɽəs
hik'ɛ.təs	'to fill'	ʃək'ɛ.təs
i'çhanəs	'to count' (object neuter)	} u'çhanəs (for both)
u'çhanəs	'to count' (object non- neuter)	
i'kharəŋç gum'gam mən'as	'to soliloquize in mutter- ing voice'	git'gut mən'as
i'sarkəs	'to leave'	'phaɽətas
mò.mi'ras	'to copulate'	motəs
'gatənəs	'to read'	sa'baq sənəs
tikò.ʃəlas	'to brush a horse'	'qhaʃotəs <u>Sh. khaʃ ɽhoiki</u>
'qharçetas	'to clap with hands'	'trapətas
thraqmən'as	'to sprout'	diʃkɽas
sar'baretas	'to castrate a bull or buffalo'	'laqta ɽtas

Under the above head, *semantic variations* may be noticed in relation to the following words—:

<i>Hu.</i>		<i>N.</i>
bi'fçjəs	'to fire a gun' (tu'maɽ)	'to spread' (a carpet, etc.)
		In Hu. 'waʃjəs is used in this sense.

	<i>Hu.</i>	<i>V.</i>
' <i>phapēnas</i>	'to mend'	'to sew'
		In <i>Hu.</i> ' <i>çukētas</i> is used in this sense.
<i>daldie</i>	'arise'	'to keep standing the whole day long'
<i>ga'tamures</i>	'to press kneaded dough finally'	'to press woven cloth'
	In <i>N.</i> only <i>dēqqhulēnas</i> is generally used for all the processes.	
<i>r'mutes</i>	'to cut bread into slices'	'to mince grass or dry bread'
		For mincing grass <i>Hu.</i> has ' <i>zarēzēraqētas</i> .
' <i>jagujas</i>	'to pick up with hands'	'to search for', as a person.
	In <i>Hu.</i> it cannot be used with reference to a non-neuter object; <i>baɽrenas</i> 'to search' is used instead.	

(7) *Adjectives and abstract terms.*

<i>Hu.</i>		<i>N.</i>
<i>Altókum</i>	'pair'	' <i>híkum</i>
<i>ba'barum</i>	'disagreeable in smell'	<i>gas'parum</i>
<i>chuṭēn</i>	'a little' (for water)	<i>thiṣēn</i>
<i>phirūēn</i>	'some' (as walnuts)	<i>kamēn</i>
<i>ḍaṅ</i>	'difficult to break'	<i>camēraɽto</i>
<i>gaṭgu'in</i>	'enemy'	' <i>duṣman</i>
<i>hík-'he.ɟi</i>	'once'	<i>hík-ḍamēn</i>
' <i>huma</i>	'shallow'	<i>ɟal</i>
<i>khuṭ</i>	'broad'	' <i>ɟo.qum</i>
<i>mr'nas</i>	'story'	<i>nr'mas</i>
' <i>phoppuṣ</i>	'bastard'	' <i>amulo</i>
<i>qh'as</i>	'fragile'	<i>mu'thaso</i>
<i>ram'ratt</i>	'level'	<i>gu'tum</i>
<i>rai</i>	'desire, will'	<i>raqq</i>

Enumerative idiom.

The above vocabularies, as for cloud, cowherd, cowhouse, male sheep, etc., will show that the 'Mundā' tendency for 'enumerative idiom' is greater in Hu. than in N., for in the former there are separate words for the detailed aspects of an object or action, thus to 'knead' in the first stage is *dëqqhulenas*, but the final press is *ga'tamuras*. In N. *dëqqhulenas* is the only word used throughout. For further examples see the above vocabularies. The closer relation of Nagari with Shinā will be also clear from the above vocabularies.

Conclusion.

The above pages give us the following results—:

(1) The dialects of Hunza and of Nagar are appreciably distinct dialects, though they are not separate.

(2) Hunza is pre-eminently a dialect of contractions, and manifests a later stage in the development of Burushaski.

(3) But while phonologically and grammatically Hunza shows a later stage of Burushaski, it preserves better the original vocabulary of the language, the vocabulary of Nagari being contaminated with Shinā.

(4) Burushaski is still an unclassified language, its classification being a subject for future investigation, but the above dialectical study has facilitated the approach to this classification. For Burushaski being now a mixed language, unless a comparatively primitive *Gemein-Burushaski* is reconstructed, its relation to other languages cannot be definitely established. The direction to this reconstruction of *Gemein-Burushaski* is afforded by the above study, which shows us that for this purpose we have to look for the phonological and grammatical forms of Nagari and the vocabulary of Hunza.

(5) The above facts have also a bearing on general Linguistics.

(a) In our methods of Dialectology, we have to bear in mind that for the reconstruction of a *Gemein-Sprache*, we may have to look for its Phonology and Grammar in one of its dialects and vocabulary in another. A language or a dialect may be old in grammar, but may look very modern from the standpoint of vocabulary. A comparison of Pañjābi with Bengali will illustrate this. Pañjābi is an older language grammatically, but its vocabulary has been greatly Persianized. The reconstruction of an older *Gemein-Pañjābi* will require a reference to allied languages with an older vocabulary.

(b) The above study also throws light on the methods of inter-dialectical research. It shows in what directions the vocabulary of two dialects, which on the surface seem to be identical, can vastly differ. Dialects with a common culture

need not show any striking difference in vocabulary relating to the human body, blood-relations and the numerals. Inter-dialectical research in vocabulary requires the exploration of other fields, as forest and agricultural life, natural and physical phenomena, and the various 'secondary' activities of man.



APPENDIX.

Standard words and sentences according to the scheme of the *Linguistic Survey of India*.

	English.	Hunza.	Nagari.	L.S.I. equivalent.
1.	One.	han, hn, hik; han'hagur one horse; hn hir, one man; hik den, one year.	han, hin, hik; han haghur, one horse; hin hir, one man; hik din, one year.	
2.	Two.	'alta, al'tan, 'alto; 'alta ha'guriŋo, (or 'hagur) two horses; al'tan'hiri, two men; 'alto 'denuŋ, two years.	al'taŋ, al'tan, 'alto al'taŋ haghur, two horses; al'tan hiri, two men; alto dining, two years.	
3.	Three.	'usko, is'ken, 'iski; 'usko ha'guriŋo (or 'hagur), three horses; is'ken'hiri, three men; 'iski 'denuŋ or den, three years.	Uskō, iskin, iski; uskō haghur, three horses; iskin hiri, three men; iski dining, three years.	
4.	Four.	'walto, 'walti; 'walto ha'guriŋo (or 'hagur), four horses; 'walto 'hiri, four men; 'walti 'denuŋ or den, four years.	Waltō, waltī; walto haghur, four horses; walto hiri, four men; waltī dining, four years.	

APPENDIX—continued.

English.	Hunza.	Nagari.	L.S.I. equivalent.
5. Five.	'chundo, 'chimdi; 'chundo ha'guriſo (or 'hagur), <i>five horses</i> ; 'chundo 'hri <i>five men</i> ; 'chimdi 'denſ or den, <i>five years</i> .	'chundo, 'chimdi	Sundō, sindi; sundō haghur, <i>five horses</i> ; sundō hiri, <i>five men</i> ; smdi dining, <i>five years</i> .
6. Six.	mi'ſmdo, mi'ſmdi; mi'ſmdo ha'guriſo, <i>six horses</i> ; mi'ſmdo 'hri, <i>six men</i> ; mi'ſmdi 'denſ, <i>six years</i> .	mi'ſmdo, mi'ſmdi	Mashindo, mashindi; mashindo haghur, <i>six horses</i> ; mashindo hiri, <i>six men</i> ; mashindi dining, <i>six years</i> .
7. Seven.	'thalo, thale; 'thalo ha'guriſo, <i>seven horses</i> ; 'thalo 'hri, <i>seven men</i> ; 'thale 'denſ, <i>seven years</i> .	'thalo, 'thale	Thalo, thalē; thalo haghur, <i>seven horses</i> ; thalō hiri, <i>seven men</i> ; thalē dining <i>seven years</i> .
8. Eight.	al'tambo, al'tambi; al'tambo ha'guriſo, <i>eight horses</i> ; al'tambo 'hri, <i>eight men</i> ; al'tambi 'denſ, <i>eight years</i> .	al'tambo, al'tambi	Altambō, altambi; altambō hagur, <i>eight horses</i> ; al- tambō hiri, <i>eight men</i> ; al- tambi dining <i>eight years</i> .

9. Nine. 'hupco, 'huŋti; 'hupco ha'guriŋfo, *nine horses*; 'hupco 'hri, *nine men*; 'huŋti 'deŋu, *nine years*.
 10. Ten. tòrumo, tòrimi; ha'guriŋfo, *ten horses*; tòrumo 'hri, *ten men*; tòrimi 'deŋu, *ten years*.
 11. Twenty. 'altar
 12. Fifty. 'alto altar tòrumo
 13. Hundred. th'a
 14. I. ʒe, ʒa
 15. Of me. ʒa
 16. Mine. ʒa, ʒa bi, *mine is*.
 17. We. mi
 18. Of us. mi
 19. Our. mi, mi ha'guriŋfo, *our horses*.
 20. Thou. uŋ, un, 'uŋe, 'une
- Hunchō, huŋti; hunchō haghur, *nine horses*; hunchō hirī, *nine men*; huŋti dining, *nine years*.
 Tōrmō, tōrmi; tōrmō haghur, *ten horses*; tōrmō hirī, *ten men*; tōrmi dining, *ten years*.
 altar; altar haghur, *twenty horses*; altar hirī, *twenty men*; altar dining, *twenty years*.
 Alto altar tōrmō
 Thāh
 Jē, jā
 Jā
 Jā; *whose horse is this?*
 Jā bi, *mine is*.
 Mi
 Mi
 Mi; mi haghur, *our horses*.
 Ung, Ungē

APPENDIX—continued.

<i>English.</i>	<i>Hunza.</i>	<i>Nagarī.</i>	<i>L.S.I. equivalent.</i>
21. Of thee.	'uŋe; 'uŋe 'haɣur, <i>thy horse.</i>	'ume; 'ume 'haɣur	Ungē; ungē haɣur, <i>thy horse.</i>
22. Thine.	'uŋe, 'ume	'ume	Ungē
23. You.	m'a	m'a	Mah
24. Of you.	m'a	m'a	Mah
25. Your.	m'a; m'a 'haɣur, <i>your horse.</i>	m'a; m'a 'haɣur	Mah; mah haɣur, <i>your horse.</i>
26. He.	m, 'me	m, 'me	In, inē
27. Of him.	'me	'me	Inē
28. His.	'me; 'me 'haɣur, <i>his horse.</i>	'me; 'me 'haɣur	Inē; inē haɣur, <i>his horse.</i>
29. They.	`ue	`ue	Ūē
30. Of them.	`ue	`ue	Ūē
31. Their.	`ue; `ue ha'ɣurfo, <i>their horses.</i>	`ue; `ue ha'ɣurfo	Ūē; ūē haɣur, <i>their horses.</i>
32. Hand.	m̄n	m̄n	Irin
33. Foot.	juŋis	juŋis	Yūtis
34. Nose.	r'mopus	r'mopus	Imūpush
35. Eye.	'ilem	'ilem	Ilchin
36. Mouth.	r'qhatt	r'qhatt	Ikhāt
37. Tooth.	m̄e	m̄e	Imih

38. Ear.	'itumel	iltūmal
39. Hair.	gu'j'aj	Ghoyang
40. Head.	'j'atɨs	Yatis
41. Tongue.	jujmus	Yūmus
42. Belly.	jujl	Yūl
43. Back.	i'v'aldas	Ivāldas
44. Iron.	chu'mar	Chhomar
45. Gold.	'genɨs	Ghinish
46. Silver.	bujri	Buri
47. Father.	jù	Yū
48. Mother.	'imi	Imi
49. Brother.	'eço	Echo
50. Sister.	jas	Yas
51. Man.	hɨr	Hir
52. Woman.	gus	Gus
53. Wife.	jujs	Yūs
54. Child.	hiles	Hias
55. Son.	ij	i
56. Daughter.	èi	Ei
57. Slave.	ɕən(?)	Tsun
58. Cultivator.	ə'dapkwɨm	Burushin
59. Shepherd.	hu'j'eltarɕ	Hoyaltars
60. God.	qhu'da	Khudā

APPENDIX—continued.

<i>English.</i>	<i>Hunza.</i>	<i>Nagarī.</i>	<i>L.S.I. equivalent.</i>
61. Devil.	ʃɛit'an	ʃɛit'an	Shaitān
62. Sun.	s'a	s'a	Sah
63. Moon.	helane	helane	Halang
64. Star.	ɔsij	ɔsij	Asi
65. Fire.	phù	phù	Phū
66. Water.	ɕhɪl	ɕhɪl	Sil
67. House.	h'a	h'a	Hā
68. Horse.	'hagur	'hagur	Haghur
69. Cow.	buja	buja	Buvā
70. Dog.	huk	huk	Huk
71. Cat.	buf	buf	Bush
72. Cock.	(hir) qer'qamuɕ	(hir) qer'qamuɕ	Hir karkamush
73. Duck.	ph'arɪʃ	ph'arɪʃ	Pharish
74. Ass.	ʃa'kun	ʃa'kun	Jakun
75. Camel.	uʃ	uʃ	uʃh
76. Bird.	belas	belas	Balas
77. Go.	nì ; to go, nias	nì, nias	Ni ; to go, nias
78. Eat.	ʃi ; to eat, ʃias	ʃi, ʃias	Shi ; to eat, shias
79. Sit.	hu'rut ; to sit, 'hurutəs	hu'rut, 'hurutəs	Harut ; to sit, harutas
80. Come.	jù ; to come, j.ùəs	jù, j.ùəs	Ju ; to come, jūas

81. Beat.	dəli ; to beat, dəliəs	dəli, dəliəs	Deli ; to beat, dəliəs
82. Stand.	daldije ; to stand, daldiejjes :	hartman`e, hartmen`as	Diyih ; to stand, Diyihas
83. Die.	gujr ; to die, jres :	gujr, jres	Guir ; to die, iras
84. Give.	juj ; to give, jujjes :	juj, jujjes	Yū ; to give, jūas
85. Run.	g`are ; to run, g`arəs :	g`are, g`arəs	Gārts ; to run, gārtās
86. Up.	'jate	'jate	Yate
87. Near.	əsijr	əsijr	Asir
88. Down.	j`are	j`are	Yarē
89. Far.	methan	methan	Mathan
90. Before.	j`ar, 'ngi	j`ar, 'ngi	Angē
91. Behind.	'ilji	'ilji	Ilji
92. Who.	'amin	'amin	Amin
93. What.	bəsən	bəsən	Bisan
94. Why.	'bəsə	'bəsə	Bisē
95. And.	ke	ke	kih
96. But.	'ama	'ama	Ammā
97. If.	-ke (added to verb)	Δqhnaj	Akhnā
98. Yes.	'awa	'awa	Awā
99. No.	b`e	b`e	Bih
100. Alas.	'ajo	'ajo	Afsōs
101. A father.	hm jù	hm jù	Fim yū
102. Of a father.	hm jùe	hm jùe	Him yūē
103. To a father.	hm jüer	hm jüer	Him yūar

	<i>English.</i>	<i>APPENDIX—continued.</i>		
		<i>Hunza.</i>	<i>Nagari.</i>	<i>L.S.I. equivalent.</i>
104.	From a father.	hm jùeum	hm jùeum	Hin yū tsum
105.	Two fathers.	al'tan jùearo	al'tan jùearo	Altan yūsarō
106.	Fathers.	jùearo	jùearo	Yūsarō
107.	Of fathers.	jùearuē	jùearuē	Yūsarōē
108.	To fathers.	jùearuēr	jùearuēr	Yūsarō ar
109.	From fathers.	jùearuēum	jùearuēum	Yūsarō tsum
110.	A daughter.	hm èi	hm èi	Hin ēi
111.	Of a daughter.	hm èiē	hm èiē	Hin ēiē
112.	To a daughter.	hm èimur	hm èimur	Hin ēimur
113.	From a daughter.	hm èimoēum	hm èimoēum	Hin ēimueum
114.	Two daughters.	al'tan jùgu'fane	al'tan 'igu'fane	Altan yūgishans
115.	Daughters.	jùgu'fane	'igu'fane	Yūgishans
116.	Of daughters.	jùgu'faneē	'igu'faneē	Yūgishanse
117.	To daughters.	jùgu'faneēr	'igu'faneēr	Yūgishansar
118.	From daughters.	jùgu'faneēum	'igu'faneēum	Yūgishansmutsum
119.	A good man.	hm fua sis	hm fua sis	Hin daltas hir
120.	Of a good man.	hm fua 'sise	hm fua 'sise	Hin daltas hirē
121.	To a good man.	hm fua siser	hm fua siser	Hin daltas hirar
122.	From a good man.	hm fua 'sisēum	hm fua 'sisēum	Hin daltas hirtsum
123.	Two good men.	al'tan fua sis	al'tan fua sis	Altan daltashkō hiri

124. Good men.	ʃua sis	ʃua sis	Daltashkō hiri
125. Of good men.	ʃua 'sise	ʃua 'sise	Daltashkō hiriē
126. To good men.	ʃua sisər	ʃua sisər	Daltashkō hiri
127. From good men.	ʃua 'sisəum	ʃua 'sisəum	Daltashkō hiriṭəum
128. A good woman.	ʃua gus	ʃua gus	Hin daltas gus
129. A bad boy.	gu'neqışr'leş	gu'neqışr'leş	Hin ghunikish hilas
130. Good women.	ʃua guʃɬanə	ʃua guʃɬanə	Daltas gushingans
131. A bad girl.	gu'neqış dɬ'sim	gu'neqış dɬ'sim	Hin ghunikish dasin
132. Good.	ʃua	ʃua	Daltas, shōā
133. Better.	(m'əsəum) ʃua	(m'əsəum-) ʃua	But shōā
134. Best.	(ujōnəum) ʃua	(ujōnəum-) ʃua	Oyōn tsum shōā
135. High.	th'anum	th'anum	Th'anum
136. Higher.	(isəsum-) th'anum	(es'əsəum-) th'anum	But th'anum
137. Highest.	(ujōnəum-) th'anum	(ujōnəum-) th'anum	Oyōntsum th'anum
138. A horse.	han 'hagur	han 'hagur	Han haghur
139. A mare.	han b'ɬum	han b'ɬum	Han bāyum
140. Horses.	ha'gurɬo	ha'gurɬo	Haghurishō
141. Mares.	b'ɬumɬo	b'ɬumɬo	Bāyumishō
142. A bull.	han 'əhmdar	han 'əhmdar	Han har
143. A cow.	han buja	han buja	Han buvā
144. Bulls.	əhm'darɬo	əhm'darɬo	Haro
145. Cows.	buja	buja	Buvā
146. A dog.	han huk	han huk	Han huk

APPENDIX—continued.		
<i>English.</i>	<i>Hunza.</i>	<i>Nagari.</i>
147. A bitch.	gus-huk	s'ōci-huk
148. Dogs.	hu'kai	hu'kai
149. Bitches.	gu'ŋaŋs hu'kai	s'ōci-hu'kai
150. A he-goat.	han hal'den	han ɣeit
151. A she-goat.	han ɕhijr	han 'ɕhigir
152. Goats.	hal'den	'ɣeittaro
153. A male deer.	ja'ttəl	ja'ttəl
154. A female deer.	'ja'təleɕhijr	ja'ttəle'ɕhigir
155. Deer.	ja'ttəl	ja'ttəl
156. I am.	ɣə ba	ɣə ba
157. Thou art.	uŋ ba	um ba
158. He is.	m bai	m bai
159. We are.	mi b'an	mi b'an
160. You are.	ma b'an	ma b'an
161. They are.	u'e b'an	u'e b'an
162. I was.	ɣə b'ajəm	ɣə b'ajəm
163. Thou wast.	uŋ bam	um bam
164. He was.	m } or 'mɛ } bam	m or 'mɛ bam
		<i>L.S.I. equivalent.</i>
		Han gus-huk
		Hukai
		Gushingans hukai
		Han haldin
		Han sir
		Hoyas
		Han giri haldin
		Han giri sir
		Giri
		ɣə bah
		um bah
		mə bai
		Mi bān
		Mah bān
		U'e bān
		ɣə baiyam
		um bam
		mə bam

165. We were.	mi bam	mi bam	Mi bam
166. You were...	ma bam	ma bam	Mah bam
167. They were.	u'e bam	u'e bam	Ūē bam
168. Be.	um 'mane	um 'mane	Manih
169. To be.	men'as	men'as	Manās
170. Being.	men'as	men'as	Manumatē
171. Having been.	'nman	'nman	Bam
172. I may be.	je əmāṣa	je ə'māṣa	Jē amanshā
173. I shall be.	je aməjam	je aməjam	Je baiyam akbir
174. I should be.	je amenas fua br'la	je amenas fua dr'la	Je amānas shōā bilā
175. Beat.	dēli	dēli	Deli
176. To beat.	dēlies or dēles	dēlies or dēles	Delias
177. Beating.	dēlies or dēles	dēlies or dēles	Nidilin
178. Having beaten.	'ndili	'ndili	Nidilin
179. I beat.	ja dōḷaba	ja dōḷaba	Jē deljam
180. Thou beatest.	'uṇe dōḷa	'ume dōḷaba	ungē deljuā
181. He beats.	'me dōḷai	'me dōḷubai	inē deljai
182. We beat.	mi dōḷaban	mi dōḷaban	Mi deljān
183. You beat.	ma dōḷan	ma dōḷuban	Mah deljān
184. They beat.	u'e dōḷan	u'e dōḷuban	Ūē deljān
185. I beat (Past Tense).	ja dēlem	ja dēlem	ja deliyam
186. Thou beatest.	'uṇe dēluma	'ume dēluma	ungē delima
187. He beat.	'me dēlumi	'me dēlumi	inē delimi

APPENDIX—continued.		
<i>English.</i>	<i>Hunza.</i>	<i>Nagari.</i>
188. We beat.	mi' dël̥mən	mi' dël̥mən
189. You beat.	ma dël̥mən	ma dël̥mən
190. They beat.	u'ē dël̥mən	u'ē dël̥mən
191. I am beating.	ja döl̥ɬaba	ja döl̥ɬaba
192. I was beating.	ja döl̥ɬabajəm	ja döl̥ɬabajəm
193. I had beaten.	ja döl̥ɬabajəm	ja döl̥ɬabajəm
194. I may beat.	ja dël̥sa	ja dël̥sa
195. I shall beat.	ja döl̥jəm	ja döl̥jəm
196. Thou wilt beat.	'uŋe döl̥juma	'uŋe döl̥juma
197. He will beat.	'iŋe döl̥pi	'iŋe döl̥pi
198. We shall beat.	mi döl̥jən	mi döl̥jən
199. You will beat.	ma döl̥jumen	ma döl̥jumen
200. They will beat.	u'ē döl̥jumen	mi döl̥jumen
201. I should beat.	ja dël̥ies ma'niŋ	ja dël̥ies ma'niŋ
202. I am beaten.	je e'dël̥es amənəm	je e'dël̥es amənəm
203. I was beaten.	je e'dël̥es amənəb'ajəm	je e'dël̥es amənəb'ajəm
204. I shall be beaten.	je e'dël̥es aməjam	je e'dël̥es aməjam
205. I go.	je 'niɬaba	je 'niɬaba
206. Thou goest.	uŋ 'niɬa	um 'niɬaba
207. He goes.	m 'niɬai	in 'niɬobei
		<i>L.S.I. equivalent.</i>
		Mi delman
		Mah delman
		Ūē delman
		Jē deljaba
		Jē delja baiyam
		jē deliya baiyam
		jē deljam
		jē deliasbah
		uŋē deljumā
		mē delji
		Mi deljan
		Mah deljuman
		Ūē deljuman
		jā deliasshōābilā
		Ādēlam āmānām
		Adēlam āmānabaiyam
		Jē adeliasshōābilā
		Jē nicham
		uŋ nichomā
		m nichoai

208. We go. mi 'nreaban
 209. You go. ma 'nreuban
 210. They go. u'e 'nreuban
 211. I went. je niem
 212. Thou wentest. um 'nima
 213. He went. in 'nimi
 214. We went. mi nimen
 215. You went. ma nimen
 216. They went. u'e nimen
 217. Go. ni
 218. Going. nies
 219. Gone. nim
 220. What is your name? 'uŋe guik besen bɪ'a
 221. How old is this } 'guse 'hagure b'ërum pojn }
 horse? } bɪ'a
 222. How far it is from } khòlum g'ɪ'ako b'ërum }
 here to Kashmir? } methan bɪ'a
 223. How many sons are } 'uŋe gue 'hale b'ërumen }
 there in your } 'jotumue b'an }
 father's house? }
 224. I have walked a } je khùlto buɔ methan gan }
 long way to-day. } dəlaba }
- Mi nichan
 Mah nichoman
 Ūe nichoman
 Jē niyam
 ung nibam
 in nīmī
 Mi nīman
 Mah nīman
 Ūe nīman
 Nī
 Nīn
 Nān
 ungē guik bisan bilah
 Gusē haghur b'ërum jat bi
 Khòlum Kashmir b'ërum
 mathan bilah
 ungē gū halē b'ërum yū bān
 Khùltō mathan gusaram

APPENDIX—continued.

- | | <i>English.</i> | <i>Hunza.</i> | <i>Nagari.</i> | <i>L.S.I. equivalent.</i> |
|------|--|--|---|--|
| 225. | The son of my
uncle is married
to his sister. | ja 'nandaje 'ine 'jasmuk'a
garə'tai } | mi'nandaje'ine'jasmuk'a
garə'tubai } | Jā nanāē i inē yasmokā
garitai } |
| 226. | In the house is the
saddle of the
white horse. | bujrum 'hagure tɹijien
h'ale bi'ea } | bujrum 'hagure 'tɹijen
h'ale bi'ea } | Halē barūm haghurē tili-
yang bisah } |
| 227. | Put the saddle
upon his back. | gus'ete tɹijien 'e.dili } | khus'e.əte tɹijen 'e.dili } | Tiliyang isē ivāldas ēgin } |
| 228. | I have beaten his
son with many
stripes. | ja m'e j 'gape tu'turane
tə'raqa dəlia ba } | ja m'e j 'gape jɹ'kanene
tak'neti dəlia ba } | Jē inē i thorak deliyam } |
| 229. | He is grazing cattle
on the top of the
hill. | 'me 'əhɹe r'thanasate
har buja u'jareai } | 'me 'chɹe r'thanate har
buja u'jareubai } | isē laghindaris chhisholi
uyarchai } |
| 230. | He is sitting on a
horse under that
tree. | 'me 'te tum'are 'hagu-
rəte nujjan b'ai } | 'me 'ete tom'are 'hagu-
rəte nu'hujan b'ai } | mē haghurat nūjā utē tum
yūharutai } |
| 231. | His brother is taller
than his sister. | m'e ɛco m'e jasmuɛum
th'anum b'ai } | m'e 'ɛcu m'e 'jasmuɛum
th'anum bei } | mē ēchō inē yas mutsum
thānum bai } |

232. The price of that is } isè gas 'alka ru'pea ke } isè gash alkā dabal kih
two rupees and a } taraj bī'a } tarang bilah
half.
233. My father lives in } ja 'āla ite juḍ h'ale } Jā āghā itē jut halē huru-
that small house. } 'hurufai } shai
234. Give this rupee to } gu'se ru'pea mēr juḍ } Gusē rūpiyah inar yū
him.
235. Take those rupees } gu'ēe ru'pea m'ēsum } Gusē rūpiyah in tsum yan
from him. } 'duge }
236. Beat him well and } 'me sua 'ndilm 'ga[kulo } Shōā nidilan gash k olo
bind him with } tr'aone i'phus } tarāō nih iphus
ropes.
237. Draw water from } gulku'lum əhl dūs } Ghulkōlum sil diūs
the well.
238. Walk before me. } j'æum əjar gu'əhar } Jā yār gusar
239. Whose boy comes } 'uŋe 'gu'əiate mēne uijən } ung gu'siat mine hilasen-
behind you ? } ju'əai } ju'chai
240. From whom did } 'ise mēneum 'dumaruma } isē min tsum dūmarūmā
you buy that ? }
241. From a shop-keeper } 'ite gi'rame saoda- } itē girame dokāndārtsum
of the village. } 'garæum }

Seasonal Nomadism and Economics of the Chenchus of Hyderabad.

By CHRISTOPH VON FÜRER-HAIMENDORF.

(Communicated by J. P. Mills.)

INTRODUCTION.

Of all the aboriginal tribes of the Deccan the Chenchus are racially and culturally the most primitive, and though at present they form but a small group they may be considered as representative of those larger populations of hunters and collectors that roamed the jungles of the tableland when the first invaders of higher culture penetrated the country south of the Godavari. While other tribes lost their social and economic independence and were gradually absorbed within the cultural system of the new-comers, the Chenchus remained comparatively isolated until recent times. During the last few generations, however, improved communications have threatened this isolation, contacts with surrounding populations deepened, the exploitation of the forests brought outsiders into the heart of Chenchu country, and thus it is that to-day only a few hundred Chenchus still live their old tribal life. These 'Jungle Chenchus', as they may be conveniently called, as distinct from the Chenchus dwelling in or near the villages of Telugu cultivators or in the settlements created by the Forest Authorities of Madras, number at present 426 men, women and children. They inhabit the upper part of the Amrabad Plateau in the Mahbubnagar District of Hyderabad, an area of about 320 sq. miles on the northern bank of the Kistna River. This plateau is an extension of the Nallamalai Hills and rises to heights of 2,800 feet above sea-level. On the lower parts of the plateau and in the adjacent plains approximately 1,800 Chenchus live in symbiosis with various cultivating castes, while the main branch of the tribe, numbering 8,078 according to the Census of 1931, live in the Nallamalai Hills south of the Kistna River in the Madras Presidency. This article deals only with the Jungle Chenchus of Hyderabad, among whom I stayed from January to July, 1940.

The literature on the Chenchus is extremely scanty and consists mainly of the article in E. Thurston's 'Castes and Tribes of Southern India', Vol. II, pp. 26-45, and Gulam Ahmed Khan's report in the Census of India, 1931, Vol. XXIII, Part I, pp. 261-276. In the same volume (pp. 277-279) B. S. Guha has described the physical types found among a limited number of the Chenchus of the Amrabad Plateau.

SEASONAL NOMADISM.

The Chenchus still tell of a time when their ancestors owned no houses, but lived under trees and in rock-shelters. That this time does not lie further back than a few centuries is borne out by a passage in Ferishta's 'History of the Deccan', who describes them as 'living in caverns and under the shady branches of trees'.

To-day the Chenchus have learnt to build houses of bamboo and to thatch them with grass, but they have by no means abandoned their nomadic habits and it would be erroneous to suppose that all Chenchus dwell in solidly built houses and permanent settlements throughout the year. Their dependence on the natural products of the forest forces them to follow in the train of the seasons and at certain times of the year to leave the villages where they have their well-built houses for places with more water and increased possibilities for the gathering of edible plants. The Chenchu does not regard these migrations as a burdensome necessity however, but seems to be driven to them by a strong nomadic instinct, for even groups who find sufficient food and water in the vicinity of their permanent villages will leave their comfortable houses as the time of the annual migration approaches and erect temporary shelters in the jungle, perhaps as little as a mile away.

The houses in the permanent villages are built solidly with circular wattle walls and conical roofs thatched on bamboo rafters that rest on a forked centre pole. They are between 10 ft. and 15 ft. in diameter with one door about 3 ft. wide and 4 ft. high. These houses are generally rebuilt every two or three years, though much of the old material is incorporated in the new building even when the site of the village is shifted.

The dwellings in the temporary settlements are much less elaborate and can usually be constructed in an hour or two. The most solid are the low grass huts, which in shape fall between beehive and cone. A less complicated type of temporary dwelling is a rectangular shelter with posts to support the walls and flat roof of leafy branches. Still easier to construct is a rough triangular shed made of stout branches in leaf.

There can be no doubt that the primitive leaf-shelters, to-day used only in temporary settlements during the dry season, represent a survival of the earlier types of dwellings used by the Chenchus, who admit that they learnt the art of building proper houses from plains people.

Before they had acquired this art, which ties them to one village site for at least a part of the year, their movements must have been even more nomadic than they are now, and the lack of cohesion of the Chenchu village as a social unit probably dates from those times when they roamed the forest in small family groups.

The whole of the Chenchu area is divided into clearly defined tracts belonging to the various village communities. Within each tract is one permanent settlement, and it is by the name of this that the whole community is known. The permanent village is invariably inhabited during the rains and the greater part of the cold weather, but in January it is frequently deserted either by all or some of the individual families, which disperse and live in small temporary settlements during the next three or four months. Many of these settlements lie low down on the banks of the Kistna River, but others are hidden in the jungle in places where water and food are assured. Towards the end of March, when the corollae of the mohua tree (*Bassia latifolia*, Roxb.) provide ample food and the raw material for distilling liquor, the Chenchus seek out places where these trees are plentiful and move from the valleys up on to the plateau,—either back to their permanent village or to other temporary settlements on the hills.

The functioning of these migratory habits can be demonstrated best by a concrete example and as such the village of Irla Penta will serve. Irla Penta lies on a ridge at a height of about 1,800 feet only three and a half miles north of the Kistna River. At present the village community consists of eleven households, but none of these remain in Irla Penta after the end of the cold weather. The *peddamanshi* or headman, who owns cattle, moves down to the woods on the banks of the Kistna River, where he and one other family of his clan build temporary shelters. There they remain for two or three months, but at the time of the mohua season they go back to the hills, either spending a short time on a nearby ridge where each of them has a small hut or returning directly to Irla Penta. Three other families of Irla Penta settle six miles upstream on the open bank of the Kistna and, when I visited their settlement in March, a family of Boramacheruvu, a village some ten miles distant from Irla Penta, had joined this group. They had built no proper shelters, but lived on the rocks near the water, only wedging a few branches between the cracks to protect themselves against the afternoon sun; and if it rained the little colony sought refuge in a rock-shelter. Each family had its own hearth, but except for a few pots and collecting baskets they had brought no other household goods.

Another man of Irla Penta with his two wives and his five children settles every year on a tributary of the Kistna, where he has built a good house and has made an attempt to grow tobacco and Indian corn. Here he is only an hour's walk from the colony on the Kistna, but apparently he prefers the solitariness of his one-house settlement. At the time of the mohua flowers he brings his family up to the plateau and settles by the tank in Boramacheruvu. His brother's wife, a widow with three unmarried daughters, also leaves Irla Penta every

year for Boramacheruvu, her native village, where the tank provides enough water for her buffaloes.

The four remaining households of Irla Penta move every January to a site on a narrow rock ledge only a couple of furlongs from the Kistna, where they find sufficient fodder and water for their cattle. At the end of March they shift to a settlement on a nearby spur, where each family owns a proper house. They too return to Irla Penta at the beginning of the rains.

Although most groups now follow the same migratory routine year after year, their movements are fairly elastic and each family is free in its choice of a camping ground for the hot weather.

These seasonal migrations often entailing visits to other village-lands are only fully understandable when viewed against the background of the structure of Chenchu society and the customary law in regard to ownership of land.

The smallest, but most important, unit of Chenchu society is the family, which consists of husband, wife (or in rare cases two wives) and their unmarried children. Of all the social units only the family is characterized by division of labour and real economic co-operation, and so great is its self-sufficiency that some men live at least part of the year with their wives and children in single-house settlements. Owing to the absence of specialization in Chenchu economics the family relies normally on its own members for its supply of food and other necessities, although in times of stress the help of blood-relations is sought, and, as a rule, readily forthcoming.

Families dwelling alone are rare, however, and most Chenchus live in small communities of three to ten households, sharing a common settlement and common collecting grounds. These communities, which fluctuate throughout the year, swelling and shrinking from season to season, may be aptly termed 'local groups'. Their cohesion is based on common interests and more or less identical activities. In certain cases the members have only assembled for the purpose of exploiting one particular kind of fruit or other food-stuff which is to be found in that locality and at that time of year in great quantities, and will disperse as soon as the supply is exhausted.

In daily life complete equality seems to reign among the members of the local group, but close observation leads us to discern two definite classes: those permanent members born in the locality, who participate in the ownership of the surrounding tract of land, and those individuals whose inclusion is only temporary either as mates or as 'guests' of blood-relations already within the group. Between the two classes there are, however, no discriminating rights in the fruits of the soil and the spoils of the chase, for those settling in a village are *ipso facto* entitled to the produce of the land.

The unstability of the 'local group' is due to the fact that every Chenchu possesses the right to reside, collect and hunt not only in the tract of land owned by the village of his father, but also in that of his mother and, if he is married, in the land of his wife's group. Thus he is free to move from one tract to the other as the season seems to advise, and to join now a 'local group' composed mainly of his own kin, and then one of his wife's blood-relations. But although individuals join at will any 'local group' where they may have relations, for certain purposes they remain linked with their home village, i.e. the permanent settlement where they grew up. There they are co-heirs to the land, while a man in his wife's village is only a 'guest'.

There exists no permanent private ownership of land, although a man is considered to be in temporary possession of any plot on which he has planted Indian corn, millet or tobacco. The tracts that form the common property of a village community are, however, clearly defined and their boundaries jealously guarded against encroachments by outsiders not entitled to its fruits by descent or marriage.

It is possible that the exogamous patrilineal clans into which the whole tribe is divided were originally territorial units and in possession of separate tracts of the country. A certain regional distribution of the clans, whose nature and function cannot be discussed here, is still noticeable, but nowadays the right to any particular tract of land is not linked up with clan-membership. Even should the clans have once been local units, a man would still have had the right to roam freely on the land of his father's clan as well as those of his mother and his wife, and thus the scope for the annual migrations of the Chenchus must always have been fairly wide.¹

PRINCIPLES OF CHENCHU ECONOMICS.

The economic system of the Chenchus is essentially that of a tribe of hunters and food collectors. For the Chenchu depends for nine-tenths of his food-supply on that which nature provides and it is only a limited number of families, who by owning a few domestic animals are now in the process of emerging from this lowest and primaeval stage of human development. Cultivation is generally restricted to the planting of a small patch of tobacco and a few tomatoes and chillies in the immediate vicinity of the houses. There are, however, some enterprising men who plant a few handfuls of millet (*Andropogon Sorghum*) or Indian

¹ A full discussion of the Chenchus' social organization will be found in my book 'The Chenchus. Jungle Folk of the Deccan', which is in the Press.

corn (*Zea Mays*, Linn.) during the rains, but their number is small and the resultant crop too negligible to add appreciably to the food-supply of the family.

Any provision for the future is alien to Chenchu mentality. To wake in the morning with no food in the house does not disturb him in the least. He proceeds leisurely to the jungle to collect roots and fruits, satisfying his hunger as occasion offers, and returns to the village in the evening to share with his family all that he has brought home. There is no storing of eatables against an emergency, or indeed is any thought given to the morrow, for almost all food is instantly consumed. Under such conditions it is only the mutual assistance between families forming the local group that tides the individual over crises such as illness.

The Chenchu's horizon is bounded by the present and to speak of an economic 'system' when dealing with a tribe living so completely from hand to mouth is liable to create a false impression, for it is just the lack of 'system' that is so characteristic of Chenchu economics. In hunting and in the gathering of fruits, the fundamental basis of the old economy, this trait is most pronounced, while with the adoption of new enterprises a change of mental attitude necessarily occurs. Thus the preparing of mohua liquor calls for a certain foresight, since the flowers must be gathered and dried for several successive days before distilling can commence and the good prices some villages can obtain from selling dried flower to plains people has induced the Chenchu to curb his own instincts and to store the flowers in pits against the time of the highest offer. Similarly in the breeding of buffaloes and oxen provision must be made for mating. We may conclude therefore that since in certain spheres the Chenchu does exercise foresight, the lack of providence is a cultural and not a racial trait, or, in other words, that it is not owing to a mental disposition that the Chenchu so seldom plans for the future, but rather that his own old culture afforded little opportunity for planned economic activity. I am conscious that this may appear a vicious circle, for, it might be argued, is it not due to the Chenchu's peculiar mentality that he has not developed more systematic methods of satisfying the most fundamental of all human needs, the need for food? This problem, applicable to all primitive races on the cultural level of food collectors, cannot be discussed here, but it may be pointed out that once in close touch with higher developed economic systems the Chenchu does learn to exercise a moderate amount of foresight, although not unnaturally he prefers the care-free hand to mouth existence of his fathers.

Another aspect of the general lack of vision is the Chenchu's wasteful attitude towards the jungle in which he lives. He will lop off branches in order to pick the ripening fruit in comfort, or fell a tree on which a red squirrel or one of the large arboreal

lizards has taken refuge. If he sights a comb in some inaccessible place, he will, if no easier method presents itself, cut down the whole tree in order to take the honey. An important exception to this attitude is the treatment accorded to creepers with edible roots. The Chenchus say that if they find a climber with particularly prolific roots they replace the earth after removing the tubers, so that the plant should not die. Such care is, however, exceptional and is not exercised in the ordinary course of digging up roots.

The absence of concerted action is another important characteristic of Chenchu economics, and one which has surely played as large a part in barring the way to progress as the lack of planning. Although Chenchus set out in groups of three or four to collect roots or fruits, individuals working side by side do not co-operate; each fills a separate basket, and each carries his basket back to his own house to be consumed by his own family. Even in hunting, an activity which would seem to offer many opportunities for co-operation, the Chenchu does not resort to concerted action. Driving and beating are unknown and the Chenchu relies entirely on chance and his skill in woodcraft. No doubt this accounts for his limited success and has helped to relegate the chase to its present secondary rôle in the quest for food. Scarcity of ritual, which occupies such a prominent place in the economic activities of other primitive peoples, is perhaps due to this lack of co-operative effort. For among the more developed primitive societies the main function of ritual connected with hunting, fishing, the sowing and harvesting of crops and the building of canoes is the bond it creates between those partaking in the enterprise, a function which would seem entirely aimless in the absence of any co-ordinate effort.

The only division of labour in Chenchu society is that between the sexes, and even this is less marked than among many other primitive races. The collection of the majority of food-stuffs during the various seasons is effected by both men and women, there being no distinction in the method employed. Certain other activities, however, such as hunting, honey-taking and basket-making are exclusively male, while women prepare most of the food. Yet even household duties may fall to the lot of men, who occasionally undertake tasks which generally belong to the domain of women. The sexes are, as in most primitive societies, largely dependent on each other and the fate of the lone man or woman is not enviable, though perhaps widows seem to find a solitary life less uncomfortable than the single man.

Although a certain measure of barter and trade must have been maintained with the plains for some considerable time, it is significant that Chenchus never barter among themselves. Economically perhaps more than socially, the family is a self-contained unit and save in cases of illness or accident, when help

is readily forthcoming from all members of the local group, the Chenchu family is able to obtain all necessities of life through the efforts of its own members. Once more, exceptions are provided by activities of recent introduction, and a man owning cattle will borrow a bull to cover his cows or a mill-stone will be lent to one lucky enough to have acquired some grain. No payment is demanded for such services, which fall under the head of general helpfulness among villagers. Yet, however great this helpfulness may seem, we must realize that it is not economic co-operation in the full sense of the word; it is not based on a definite system of rights and obligations and is, so to say, accidental and not institutional.

This complete lack of the institutional factor in economic activities may perhaps baffle the student of human society, who is accustomed to think of primitive economics woven within a network of ritual, reciprocal social obligations and tribal lore, but if we review the social structure of the Chenchus it becomes evident that the economic independence of the individual family is correlated to its status as a self-contained social entity, free at any time to sever its connection with the village group. It is abortive to question whether the individualistic trend in Chenchu economics is responsible for the absence of a rigidly organized social unit larger than the family, or vice versa; the interdependence between economics and social organization is obvious.

FOOD COLLECTING.

The majority of the Chenchus living on the upper plateau subsist almost entirely on the fruits, plants and roots, which they are able to collect in the forests and the daily task of gathering these products eclipses all other occupations. It is the digging stick and the collecting basket on which the Chenchu relies for the bulk of his food-supply.

Edible fruits and plants vary with the seasons, and while there are times when it is comparatively easy for the Chenchu to collect ample food, there are others when he has to struggle hard to provide himself and his family with sufficient to eat, and many are the days he goes to sleep on an unsatisfied stomach.

During the cold and dry seasons the adult men and women leave the village with digging sticks over their shoulders and collecting baskets on their hips about three hours after sunrise. They go in twos, threes or even fours to those parts of the forest where they expect to find edible roots or fruits. Husband and wife, particularly in the first years of marriage, often go to the jungle together, but more often the sexes separate and there is a definite tendency to seek companions of the same age for the day's work. When fruits are in season Chenchus are certain to fill their baskets, but the digging of roots is more dependent on chance and in the dry season women frequently return after a

full day's work with little more than a handful of roots in the bottom of their baskets, which was all that remained after the satisfying of their immediate hunger in the jungle. Dusk nearly always finds the women in the village, but the men sometimes make two-day excursions to far-away collecting grounds, camping in the jungle for the night and only returning to the village the following evening. Even such expeditions do not yield an exceptional quantity of roots, for most of that which the men collect is roasted and eaten while they are away from home.

During the cold and the first part of the hot season the mainstay of Chenchu diet consists of the edible roots, or more precisely the tubers of various creepers; some thrive all the year round, while others can only be collected during the dry season.

The most important of these tubers is *nalla gadda*, which is of a white soapy texture, with a taste that slightly resembles potatoes. It comes into season at the end of the cold weather and lasts without interruption till the beginning of the rains and there are times when the Chenchu subsists almost entirely on *nalla gadda*. *Eravala gadda* and *nula gadda* are to be found at all times of the year, except during the rainy season when these tubers decay in the damp earth. *Chenchu gadda*, however, occurs throughout the year. It grows perpendicularly in the soil, two to three feet deep, and entails much hard labour to unearth; it is therefore the men who generally dig up this particular tuber. During the rains *Chenchu gadda* is collected in great quantities, but it is said to have most flavour during the hot season. *Donda gadda* is another tuber collected at all seasons, but it favours the lower valleys and is not very plentiful on the top of the plateau. The seed-pods of this creeper ripen during June, when the Chenchus collect the seeds and eat them raw. *Samakura gadda* is the tuber of a small plant not more than a foot high and is collected exclusively at the end of the rains when it develops in great quantities. The pods maturing in the autumn are boiled whole, but only the seeds they contain are eaten; these are said to be very satisfying. Ultimately there is *gita gadda*, a tuber only eaten in times of emergency, when no other food is available, for its consumption is followed by acute indigestion.

When digging for tubers the Chenchu sits on the ground, usually with one leg outstretched and the other crooked and drawn up, while the digging stick is operated with both hands. Men sometimes squat when digging for roots bringing their whole weight to bear at each thrust. Since more often than not the creepers grow in stony soil, many stones must be removed before the earth immediately surrounding the roots is reached. It is difficult to estimate the exact position of the tubers, but when the first hairy fibres appear, the hands are used to scratch

away the last covering earth in order not to damage the tubers with the iron point of the digging stick.

In the cold weather the ripening of various fruits breaks the monotony of a tuber diet, but the individual species last but a short while, and within a few days the Chenchu falls back on the filling, but not exactly tasty tubers. During January he collects the large brown velvety pods of *Bauhinia Vahlia*, W. & A., the most abundant climber on the plateau. Its green seeds are roasted or boiled and though they are slightly bitter, they have a not unpleasant flavour even to those unaccustomed to Chenchu fare. During the same month the pods of *Tamarindus indica*, Linn. are plucked when the pulp of the pod is still juicy. These pods are strung in much the same manner as French beans, the outside skin is removed and the whole pod then dipped in ash to mitigate the acidity. Tamarind pods play a fairly important part in the diet until the middle of February.

The last weeks of February and the first of March are a poor time for fruit. In some localities the Chenchus pick the unripe berries of *Buchanania latifolia*, Roxb., cracking the double shells in order to reach the kernels (*chironjis*), which at this time of the year are the only edible portion. The Chenchus whom I found camping on the Kistna River had, at the time of my visit, nothing to eat but these small nuts. It was the middle of March and they complained that for days they had been unable to find any roots, although the yield of the valley had been good on their arrival two months previously.

In March the Chenchus collect the first tender green blossoms of a tree, locally known as *mirikai*, which they chop up and boil. They like to eat these mixed with curd, but this is only possible when there are buffaloes in the village. Soon the fruit of *Ficus infectoria*, Roxb. ripen and are eaten as an occasional relish while at the end of the same month the first of the red figs of *Ficus glomerata*, Roxb. come into season. The Chenchus of Boramacheruvu, where I stayed at that time, used to make a dash for the fig trees with the greying dawn, each anxious to be the first to arrive and to secure the most and best of the windfalls. They explained that they could not climb the trees, because the trunks were infested with red ants, and thus were forced to wait till the figs fell to the ground. During these days they sat in the village most of the morning, eating their fill of the over-ripe fruit and cutting the rest into pieces and drying it in the sun to preserve it till the evening.

Soon after the ripening of these figs the first corollae of *Bassia latifolia*, the mohua tree, drop to the ground and with this begins the mohua flower season, so eagerly awaited by all Chenchus. In the preceding weeks the tall grass under the trees has been fired and the fleshy corollae which litter the charred ground during the next two months are therefore easy to collect. Mohua flowers are collected in great quantities for

food as well as for the distilling of liquor. In most Chenchu villages the greater part of those brought home to the village is boiled and eaten at once, only a small portion being set aside each day by the individual families, to be dried on the rocks or on the open spaces in front of the houses and used for liquor. The Chenchus sometimes boil the leaves of *Erythroxylon monogynum*, Roxb. with the mohua flowers, whose slightly bitter taste probably counteracts the sickly sweetness of the mohua.

Used as food the fresh flower is boiled, but when intended for liquor the corollae are dried in the sun for several days. Mohua liquor is almost pure alcohol and very potent; it is often drunk while still warm, though before a wedding or other ceremony it is usual to make a couple of pots in advance.

The mohua flower season lasts through April and May. The same months see the ripening of the fruit of *Buchanania latifolia* and the Chenchus eat the pleasant sweet flavoured pulp as well as the kernels already mentioned above. Often the kernels are removed from the pulp and cracked one by one, but sometimes whole berries are squashed between stones and the resultant mash eaten raw. The fruit of *Buchanania angustifolia*, Roxb. is very similar, the berries being larger, and it too is consumed by the Chenchus whenever found, though it is less plentiful on the plateau. In gathering fruit of this kind the Chenchus usually climb the trees devouring all the ripe berries within reach; sticks are also used to beat the branches so that the fruit falls to the ground, where it is eagerly pounced on by children and old men squatting below. A more wasteful method, but one typical of Chenchu mentality, is the lopping of the fruit-bearing branches so that the berries may be collected in comfort.

It is also during May that the small red fruit of *Ficus bengalensis*, Linn. come into season, and thus the Chenchu enjoys an abundance of food at this time of the year. The result of this time of plenty on the appearance of the Chenchu is most striking and the limbs of men and women put on weight, while faces, which in the cold weather had worn a lean and hungry look, become plump and almost unrecognizable.

The season of mohua flowers and *chironjis* comes to an end, however, in the second half of May, and the Chenchu then reverts to his diet of tubers, several kinds of which are particularly plentiful and well flavoured in the time between the first showers of May and the breaking of the monsoon. Moreover, there are the young tender leaves of *Tamarindus indica*, which are boiled and eaten and the figs of *Ficus bengalensis*, which ripening gradually last till late in June. The last of the main fruit trees to come into season is the *Eugenia jambolana*, Lam., whose oblong black berries have a very pleasant taste and are collected in enormous quantities when they ripen at the end of June.

With the breaking of the monsoon, numerous herbs spring up all over the forest. Many of them are eaten by the Chenchu and I have myself welcomed them as a substitute for vegetables, just as I learnt to appreciate *nalla gadda* in the place of potatoes. Among the herbs that are most frequently eaten are *dogal kura*, *pauli kura*, *banka kura*, *bodumal kura* and *sher kura*. Sometimes several varieties of herbs are mixed, but the Chenchus really prefer boiling and eating one kind at a time while they seldom have salt or spices to flavour such leaves.

During the later part of the rains these herbs and some varieties of roots form the backbone of the Chenchu's food and on days of heavy storms, when he cannot dig for roots, a few herbs collected near his house help to stave off hunger.

From the end of the rains till about January the forest provides little else but tubers and it is probably then that the menu of the Chenchu is most monotonous.

At certain times of the year the Chenchu is able to supplement his diet with the honey of wild bees, to which he is very partial. In all matters relating to food the Chenchu is a keen observer and he knows that the best and thickest honey comes from the *anduku chettu* (*Boswellia serrata*, Roxb.) and the *pachardu chettu* (*Albizzia procera*, Benth.), all other kinds being rather thin. The honey of the rock-bees, which are particularly abundant in the cliffs of the Kistna gorges, is taken towards the end of the hot season. Long ropes are used to scale the cliffs to reach the combs situated between the cracks, and these are secured to a tree on the top of the rock and watched over by one man, while another descends the rope with a honey basket tied to his hip and a bundle of smouldering leaves on the end of a long stick with which to smoke out the bees. When the bees have been dispersed the whole comb is cut from the rock and carried up the rope in the honey basket.

Trees on which honeycombs have been discovered are climbed in the usual way and the bees smoked out. When a comb lies in a hole in the trunk the Chenchu puts in his hand and takes the comb by pieces, but if it hangs on a branch he carves it off whole with his knife.

Arrows attached to strings are shot into combs that hang in inaccessible places, and the Chenchu sits on the ground with a basket between his knees, catching the honey that exudes from the spot where the wax has been pierced and flows down the string into his receptacle. A similar expedient is a spiked stick attached to a broad strand of fibre, which is hitched to the end of a long bamboo and thrust into the comb; in this case the honey flows down the broad strand of fibre.

Although honey is highly valued by the Chenchus, who say that they eat it together with the wax and any grubs which happen to be in the cells, it is only collected occasionally and in small quantities.

HUNTING AND FISHING.

Classifying the Chenchus of the present day as a 'tribe of primitive hunters and food collectors' may give rise to a misconception. For although the men, and especially the young men, often carry their bows and arrows, occasionally even setting out with the definite purpose of hunting, the chase contributes but meagrely to the general supply of food. During the six weeks I stayed in Boramacheruvu the men of the village killed only one deer, and this was shot with a gun. In spite of the innumerable peacocks and jungle fowl in the nearby thickets no other game was brought home.

The marksmanship of the Chenchus whom I saw using their bows and arrows was not remarkable, but judging from the stories old men tell of their youth and the fact that, despite many vicissitudes, the bow and arrow does still survive, it would appear that the Chenchus of past generations were more successful in the pursuit of game. Yet it is probable that Chenchu diet, like that of so many other primitive races of tropical regions, was always mainly vegetable, only occasionally bettered by the flesh of hunted animals.

Nowadays small game like hares, squirrels, monkeys and birds are shot with bows and arrows while guns are generally used for hunting sambhur and other deer, and, very exceptionally, bear, panther and tiger. The times are still remembered, however, when these larger animals too were hunted with bows and arrows; the adequacy of a Chenchu bow in bringing down sambhur and deer is demonstrated by the Chenchus of Madras Presidency, who are allowed to hunt freely as long as they use only bows and arrows and often bag large game with these weapons.

But on the Amrabad Plateau all men do not even possess bows, though those who do are frequently to be seen with them in hand when setting out to collect tubers or fruits. If they sight a squirrel or other small animal they creep up to it, approaching as near as possible before shooting. Should they score a hit they make a fire immediately, singe off the animal's fur, and then roast it whole in its skin over the fire. If a man is alone he will finish the whole animal himself, or he may eat the head and legs and take the rest home, but if there are several men together they will share the prize, however small. Chenchus spotting a Malabar squirrel in an isolated tree will often attempt its capture, even if they have no bows; they surround the tree and pelt the animal with stones, until it jumps from the tree in an attempt to escape, when the Chenchus will set on it and kill it with sticks.

Men in search of small game string their bows, which otherwise they carry unstrung, and creep noiselessly through the jungle with knees bent and cautious steps. They are careful

that no rustle of leaves or breaking of twigs betrays their approach and as they pass they turn up the leaves of giant creepers on the chance of spotting possible game concealed among the foliage. An animal sighted in the high branches or dense thicket they chase into the open by hurling sticks and stones until it comes within range of their arrows, or they will let fly the *kola*, an arrow with a blunt head, against the tree trunk, to scare the animal from its hiding place.

The customary behaviour connected with the chase of larger animals is difficult to observe, since the Chenchu, in attempting to evade the interference of forest officials, observe the greatest possible secrecy. However, I managed to establish enough confidence among certain men to induce them to tell me something of the methods which they would adopt in hunting larger game. They will, they said, watch an animal's habits and erect a small leaf screen where they find its spoor and where they know it is accustomed to pass. Here they will lie in wait, and will try to aim at a point just behind the shoulder. If they can get a shot at not more than fifteen yards the point of the arrow will come out of the other side of the animal.

Some idea of the technique of hunting with the gun as practised by the Chenchus south of the Kistna River about two generations ago can be gathered from an unspecified report quoted by E. Thurston.¹ 'The Chenchu is every bit as bad a shot as the average aboriginal. He rarely stalks, but when he does, he makes up by his skill in woodcraft for his inexpertness with his gun. He understands the importance of not giving the deer a slant of his wind, and if they catch a glimpse of him, he will stand motionless and black as the tree trunks around. The ambush by the salt lick or waterhole, however, is his favourite method of sport. Here, fortified with a supply of pungent smelling liquor, which he illicitly distils from mohua flower, he will lie night and day ruthlessly murdering sambhur, spotted deer, nilgai (*Bose laphus tragocamelus*), four-horned antelope (*Tetracerus quadricornis*). Tigers often stalk down and drink and roll in the pool, but the Chenchu dares not draw a bead on him. Perhaps the indifference of his shooting, of which he is conscious, deters him.'

It seems that larger animals are never carried intact to the village, but are cut up in the jungle where they have fallen. A lone hunter fetches the other men of the village and together they skin the animal and divide up the meat. They roast and eat as much as they are able on the spot, and after having gorged most of the animal, they take the remainder home to their wives and children. Meat cooked in the village is invariably boiled and not roasted, but nothing is added or eaten with the flesh,

¹ E. Thurston, *Tribes and Castes of Southern India*, Vol. II, pp. 35-36.

which is considered a great delicacy. Visitors in the village also receive a portion, but the man who shot the animal keeps one whole hind leg as well as the skin, which he dries and later uses as a mat. All that cannot be consumed in the village on that day is cut into strips and dried in the sun.

On the spot where the animal fell a small part of the meat is cut off, cooked and offered to Garelamaïsama, who is the main deity of the Chenchus and the one most frequently invoked; she is closely connected with hunting and according to Chenchu tradition, it was she who forbade their forefathers to kill female animals. This taboo is, however, no longer respected.

A man may only hunt in those lands to which he has a right, and even to-day the boundaries of the hunting and collecting grounds belonging to the various villages are nominally respected, but in the old times the least infringement of the boundaries gave rise to inter-village quarrels which sometimes led to bloodshed. When a wounded animal fled across the boundary into the hunting ground of another village, however, the hunter who wounded it had the right to take away the meat.

Bow and gun are not the only means of procuring flesh. Stones are used as missiles to kill squirrels and birds, and sticks to break the back of the 'udimi', a large arboreal lizard.¹ Some men also use dogs to smell out and catch these lizards, and other animals such as hares and the small grey squirrel, but once the prey is secured the Chenchu rushes forward and extracts it from the clutches of the dog, who is lucky if he receives the entrails of the animal. No offering is made to Garelamaïsama when animals are caught by dogs, and this seems to suggest that their use in hunting does not date back to very ancient times; a recently introduced method would naturally be unaccompanied by the old ritual. Neither in Thurston nor in any other account of the Chenchus are hunting dogs mentioned and I am therefore inclined to discount the statement made by some men that in the old times they tamed wild dogs and used them in similar fashion. The lizards, whose flesh is highly valued by the Chenchu, are hunted mainly in the rainy season, when they come out of their holes and are easy to catch.

Chenchus are not particular as to the freshness of their meat, and they do not despise the kills of tigers or other beasts of prey. Wild game eaten by the Chenchus includes sambhur, deer, goat, bear, hare, squirrel, wild cat, porcupine, peacock, jungle fowl, pigeon and practically any smaller bird which he is fortunate enough to capture, as well as the arboreal lizard. They do not eat tiger, panther or dog, nor will they touch snakes and frogs.

When the birds nest the boys climb the trees in search of eggs and young birds; birds, however small and even if they happen to be young birds of prey, are eaten, but the Chenchus

¹ The Indian Monitor (*Varanus bengalensis*, Daud.).

rarely attempt to shoot grown hawks, kites or vultures. They are also very partial to white ants, which are dug up in the cold weather and considered a great delicacy; when the white ants swarm in May and June they are caught in holes made in the ground and boiled or roasted, all parts being consumed including the wings.

The absence of any kind of trap or snare is a remarkable deficiency in the Chenchus' technique of securing game. This could hardly be set down to a degeneration of culture, which certainly could not have entirely eliminated such an easy and profitable means of obtaining food, and we have therefore to contend with the phenomenon of a primitive jungle tribe unfamiliar with trapping and snaring. The Chenchus have heard of such methods, and say that the plains people know how to trap birds, but that Chenchus on the plateau are ignorant of such devices.

Hunting as practised among the Chenchus of the Amrabad plateau to-day shows evident signs of disintegration. In search of the causes for its relegation to a secondary rôle in Chenchu economics, we are able to discern two factors which no doubt greatly precipitated its decline. The most decisive of these has undoubtedly been the restriction imposed by the Forest Authorities, who definitely discourage the shooting of the larger animals. A second factor may have been the introduction of the gun two or three generations ago; in consequence the Chenchu's skill in handling the bow and arrow rapidly deteriorated, though it was not long before he realized the difficulties of keeping the gun in order and of procuring the cash for the necessary powder. There are many indications that the Chenchus enjoyed a period of unnatural prosperity some sixty or seventy years ago. This boom, which seems to have occurred when they first began to sell large quantities of minor forest products, enabled them to purchase guns and other novel effects. Once in possession of such a powerful weapon, the Chenchu neglected his bow and even failed to instruct his sons in its art. Nowadays most guns have disappeared, for they have either been sold in times of stress, or fallen into disrepair, and the Chenchus never possess enough money to buy new ones or to have the old ones repaired. But the tradition of archery is broken and the present-day Chenchu is no longer as skilled a hunter as his ancestors.

There are only a few places where fish are to be found on the plateau and thus the opportunities for fishing are scarce. Many villages have no river or tank within the boundaries of their land and the people therefore never go fishing. Those Chenchus, however, who live close to valleys with perennial water occasionally try their luck in the pools, where water stagnates during the dry season. They take the corky bark of *Mundulea suberosa*, Benth., pound it, mix it with the red sand of white ant heaps and scatter it over the surface of the water. The poisonous

bark stupefies the fish, which are then easily caught with the hands. This method is only successful in shallow pools where there is no current.

The Chenchus have also learnt to catch fish with line and hook, both of which they buy in the plains. Rods are sometimes made of bamboo, and worms or pieces of fruit are used as bait, while the bent quill of a peacock feather acts as float. This manner of fishing is not very popular, however, probably on account of the great patience required in waiting for a bite.

Women never catch fish, though they will sit looking on, waiting for their share of the catch. Men sometimes go on fishing excursions and are away two or three days, camping in the jungle overnight. When fish are landed, they are rubbed on flat stones until the skin is free of the rough silvery scales; they are then cut open and the guts are removed. A fire is made by the water's edge and a part of the catch will be roasted on a spit and eaten at once, while the remainder is taken home, where it is cut into pieces and boiled with salt and chillies, if the latter are available. Fish are carried to the village strung by the head on twigs.

In contrast to the ritual after a successful hunt, when offerings are made to Garelamaisama, no ceremonial acts of any kind appear to be connected with either method of fishing, and this may be taken as an indication that the catching of fish does not represent a very ancient element in Chenchu culture.

DOMESTIC ANIMALS.

All Chenchus agree that their forefathers had no domesticated animals but the dog, and even to-day the greater part of the Chenchus on the plateau do not possess any other animals. In most villages, however, there are families who own buffaloes, cows or goats, and it appears from the life-stories of many old men and women that about thirty or forty years ago a considerably larger number of cattle was in the hands of the Chenchus. The Chenchus say that the decimation of their stock was effected by the epidemics brought in by the cattle of graziers which annually invade the forest. Although disease undoubtedly took a great toll, the decline is also largely due to the serious worsening of the Chenchu's economic situation, which leads them to sell many of the calves, so that year by year the number of their cattle dwindles instead of increasing. How the Chenchus originally acquired cattle is open to question, but it seems that at the time when they were able to sell large quantities of forest produce to traders in the plains they began to purchase various kinds of young stock.

The fact that a tribe of food collectors had, and still has, the desire and the aptitude to keep and breed these animals

is noteworthy and indicates that under certain circumstances, the transition from hunting and collecting to cattle-breeding is easier than from hunting and collecting to agriculture. No encouragement has been given to the acquisition of cattle, whereas definite and mostly unsuccessful attempts have been made to settle the Chenchus as cultivators. Nevertheless it is understandable that cattle-breeding came to be readily and spontaneously adopted by the Chenchus, for it is fully consistent and even favoured by their nomadic habits which on the other hand erect unsurmountable barriers in the ways of cultivation. During the dry season, when water becomes scarce on the plateau, cattle are easily driven to some place where a more ample supply is to be found, even should this entail a journey down into the Kistna valley.

Buffaloes are as a whole more favoured than oxen, for they are better fitted to withstand the climate of the plateau, and in most Chenchu villages there are at least three or four buffalo cows, as well as a few calves. Cattle are kept exclusively for milk and for the calves, which always realize a certain amount of grain or cash. The meat is not eaten, for with the acquisition of cattle, the Chenchu adopted the prejudice of the Hindu against eating beef. There is in his case no religious reason for this custom, which he probably took over without question when he first became acquainted with these animals. From the point of view of diet, however, it is a pity that he forgoes the meat of his domestic animals.

Owners of bulls lend them free of charge to other Chenchus for breeding purposes, but they sometimes hire them out to plains people against cash or in the liquidation of a debt.

At night buffaloes and cows are tethered to wooden posts in front of the houses, but where the village is built on rock the animals are fastened to long poles laid on the ground, which are well weighted down by boulders and piles of stones. The ropes are usually fastened to one of the forelegs, but nooses are used for young calves. The milking is done in the morning and this task generally falls to the lot of the owner's wife, though sometimes men milk too. The milker squats beside the cow, gripping a pot between the knees and milking with both hands. Calves are put to their mothers a few minutes before milking to encourage the yield, but then they are tied up some distance away. A small quantity of milk is, however, left in the udders, and before the cows are driven out to grass the calves are allowed to drink. At midday the calves are watered and fed with a little dried grass; as long as they are small they are kept tied up well within the village for fear of tiger and panther, but later they are allowed to graze with the herd, although even at this stage they often fall victim to beasts of prey. In the evening the cattle are driven home to the village, but they are rarely milked a second time.

The milk is used in various ways. Children are given a small quantity fresh, and the helpfulness between co-villagers generally prompts a man owning buffaloes or cows to give a little of his milk to all the small children of the group, without expecting anything in exchange. The larger part of the milk is used for making ghee, which is sold, only a small quantity being kept to smooth the hair after washing. The butter-milk is allowed to turn to curd, which the Chenchus like to eat mixed with various kinds of food, while the whey is drunk, a little salt being added whenever available.

At present goats are kept only by a few and it is difficult to understand why they are not more popular, for they serve the double purpose of providing milk and meat; Chenchus not only drink goat's milk but eat goat's flesh and use the skins as mats.

Chickens are even more rare. The flesh as well as the eggs are eaten, but poultry does not make the same appeal to the Chenchu as cattle.

In every Chenchu village there are always a number of dogs, which announce the arrival of any stranger with continual yelping and barking. In the old times, I was told, the Chenchus tamed wild dogs with red hair and black faces, which they caught in the jungle as puppies, but nowadays the majority of Chenchu dogs are of the same mongrel breed as those of the plains people.

Although domesticated animals had, with the possible exception of dogs, no place in Chenchu culture of olden days, they are now well established, and there can be little doubt that one of the possibilities for improvement in the Chenchu's economic situation lies in the extension and encouragement of cattle-breeding.

CULTIVATION.

In marked contrast to the Chenchu's aptitude for breeding cattle is his attitude towards cultivation. Attempts to introduce plough-cultivation on the upper plateau have failed almost completely. In Vatellapalli, a village where a few households of Waddars were settled with the idea of creating an example and encouraging the Chenchus to till the soil, only one man took to ploughing the land, but he is now too old to work and no one else, not even his own son, follows his example. A few other people of Vatellapalli did cultivate for a time, turning up the earth with hoes, but they also abandoned the attempt some time ago, and now there is no Chenchu in the village who works a field. In Koman Penta the *peddamanshi* grows *jawar* (*Andropogon Sorghum*, Brot.) and *ragi* (*Eleusine Coracana*, Gaertn.); he does not do all the work himself, however, but has entered into a kind of partnership with a Mohammedan, who comes up from Amrabad, a village on the lower part of the plateau, every year and shares in the work as well as the yield. The *peddamanshi* complains that none of the younger men show

any inclination to work on the fields, and that they all prefer to go to the jungle for roots.

There exist no other cases of Jungle Chenchus embarking on plough-cultivation, but during the rains some Chenchus fence in small plots where they scratch the surface of the earth, removing the grass with broad flat wooden battons, and then plant grains of millet and Indian corn in holes made with their digging sticks. This work is usually executed by men, but sometimes widows too have their small plots. The seed millet is bought, but a little Indian corn is kept from one year to the other. The crops grown on these patches do not form any substantial addition to the Chenchu's food supply, but they are a welcome change after a diet of herbs and the tasteless, watery roots during the rains. Small quantities of tomatoes and chillies are sometimes grown round the houses. Fruit trees are practically never planted.

There is, however, a fenced-off patch near every village where tobacco is raised. The seeds, which are usually bought in the plains, are sown in small plots and the seedlings transplanted when they are a couple of inches high. The leaves are dried on stones and some people keep the seeds for the following year. It appears that not all men of a settlement plant tobacco every year, but only one or two, who supply the needs of the rest of the community as well as any relation in need, the task falling to another man in the following year. Like the people of the plains, the Chenchu smokes tobacco rolled up in the large pliable leaves of *Diospyros melanoxylon*, Roxb. which are called 'bidis'.

The present mentality of the Chenchu appears definitely ill-suited to agriculture on any considerable scale, and it would be misleading to expect a radical change in this situation within one or two generations. For even in the Kurnool District of Madras, where the Chenchus have been settled in large permanent villages and given all the necessary facilities, only comparatively few have taken to cultivation.

TRADE AND BARTER.

Before the Chenchus came in contact with races of higher developed culture, trade and barter were probably non-existent. But these times lie far back and for a considerable period the Chenchus must have depended on barter to obtain the knives axe-heads and iron for arrow-tips, which for generations have formed an indispensable part of their equipment. The commodities they tendered in exchange for these goods were undoubtedly forest produce, such as honey, wax and fruits, and sometimes perhaps even venison.

In recent years the Chenchus' demand for 'foreign' goods has increased. The discarding of the leaf-dress of their ancestors

has given rise to the need for clothes and with the adoption of a more settled mode of life, they have learnt to covet such household goods as pots, winnowing fans, and mill-stones, all of which must be bought in the plains. Moreover, they have grown to consider rice and millet as the most desirable form of food, and one which to-day they will go far out of their way to obtain.

While the ever-growing contact with outsiders which has followed the opening up of the forest has increased the Chenchus' demand for trade articles, it has proportionately decreased their ability to provide the necessary goods in exchange. For the exploitation of their land by the Forest Department and by contractors has deprived them of their former monopoly in forest produce, thereby curtailing their only source of income at a time when they stood most in need of produce to counter-balance the new developments. This probably explains how it is that every Chenchu will assert that his grandfather was more prosperous than he and had excellent opportunities of selling jungle products to plains people, who used to pay very high prices. There are still minor forest products which are sold by the Chenchu such as mohua flowers, *chironji* (the kernels of *Buchanania latifolia*), the fruits of *Terminalia chebula*, Retz. which gives the black *myrabolams*, honey, the aromatic resin of *Boswellia serrata*, Roxb., cast-off sambhur horns, and bamboo baskets. Unfortunately, he has, as a rule, no other market than the banyas of the villages on the edge of the plains and these take advantage of his simplicity and cheat him in the most unscrupulous manner.

All these forest products afford, however, but seasonal and spasmodic sources of income and it is only men owning cattle who run steady accounts with the banyas, for they are able to supply ghee during the greater part of the year and occasionally have calves for sale.

The goods which the Chenchu acquires with what he realizes on his collections of forest products can be divided into two groups: cloths, household goods, etc., and food. Cloths for himself and his wife and his children, although not plentiful, are a considerable drain on his resources and often involve him in debt. Many of the essential implements and household utensils must also be bought from a banya or a bazaar. Fortunately, the expenditure for axe-heads, knives, and the iron points for digging-sticks has only to be made once in a lifetime. Pots, however, do not last for ever and have often to be replaced.

Ultimately, there are the food-stuffs, which with the infiltration of plains ideas have to be purchased for certain occasions. At weddings it is now imperative to have rice, chillies, dhal and salt, which cost the bridegroom two or three rupees and unless the event falls within the mohua flower season he must spend at least two rupees on liquor. In the same way rice and spices are now required for the ceremonies following death and if

possible a woman is given rice or millet on the days after confinement.

Apart from these special occasions, for which such foods are now considered necessary, the desire to supplement his jungle diet with grain is ever present and men going to the plains to sell their produce almost invariably return with at least a small quantity of millet knotted in their cloths.

Labour is only an insignificant source of income. In the dry season and at the beginning of the rains the Chenchus near the cart tracks are occasionally recruited by the Forest Department for the demarcation of coups and the upkeep of nurseries. They seldom work for contractors except in collecting some of the auctioned minor forest produce.

CONCLUSIONS.

The Chenchus of the Amrabad plateau have retained the characteristics of primitive food collectors to a larger degree than most jungle tribes of Southern India, with whom they have racial and cultural affinities. The keeping of cattle by a number of men and the frail attempts at cultivation have not changed the essential features of their mode of living or their economic system. Yet fresh needs have arisen and there has set in a process of adaptation to the habits of the surrounding population. The Chenchus now wear clothes and use household utensils that are very much the same as those of the lower Telugu castes and they have learnt to find marketable goods to barter for these things. Growing contact with their neighbours has induced many of them to leave the jungle and settle in the villages of the plains. But those who to-day still live in the hills cling tenaciously to their old forest life and scorn the idea that they too might exchange it for a more settled existence. Their old social organization has remained intact and their economics are still what they have been since time immemorial—the economics of a tribe of primitive food-gatherers.

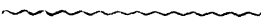




FIG. 1. Chenchu bowman.



• FIG. 2. Chenchu women digging for edible roots.



FIG. 3. Chenchu hut in a temporary settlement.



FIG. 4. Chenchu houses, one half completed, in a permanent village.



FIG. 6. *Chenhus* climbing a tree in search of honey.



FIG. 5. *Chenhu* couple on their way to the jungle to collect food.

The Rock Engravings of the Middle Indus.¹

By M. E. and D. H. GORDON.

This article deals with a number of rock engravings which are situated in an area surrounding a stretch of the Middle Indus, some four or five miles in length, in the general vicinity of the confluence of the River Haro, which is some six miles down stream from the Attock Bridge.

THE SITES.

There are so far recorded, four main sites where these engravings are to be found, Mandori and Gandab on the West Bank, and Ghariala and a site a few hundred yards above the Haro confluence on the East Bank of the Indus. The Yale-Cambridge expedition which examined these sites in 1936 mentions engravings as being situated two miles from the broken down Choi bridge, along the bed of the river Haro in the direction of the river Indus, we hunted for these for a number of hours but could find no trace of them.

The best known of these sites is Mandori, here the engraved rocks are situated right down at the water's edge, and it is only in an exceptionally dry year, or one with deficient snow-fall in the mountains, that the whole of the rocks become high and dry. For the greater part of the year these rocks are for the most part completely submerged. There is a main group of rocks which bears a large number of engravings, which are also the best and most interesting of any yet found. The largest rock of this group has been badly fractured at some time subsequent to the period at which the engravings were made. In the vicinity there are some eight or nine other rocks bearing less interesting engravings, mostly situated up-stream from the main group for a distance of some three hundred yards. As is the case with all these sites, much time will be saved if one can get some intelligent villager to guide one to them. The village of Mandori, after which this site is named, is a good mile down-stream of the site, and an extra two miles or more on a hot day can be most annoying.

¹ An article very much on the same lines was accepted by the German Year-book *Ipek* in August 1939, some months before the appearance of Mr. Cuthbert King's article in *Man* (83, 1940). As it is probable that this article was never published, a fresh one is now communicated to the Royal Asiatic Society of Bengal through the kind offices of Dr. B. S. Guha.

The site of Gandab is about four miles further down the river, the rocks visited by us however were some distance from the bank, being more than a mile from the present course. Here the engravings are not easily found as they are on smaller rocks scattered over a fairly wide area. Ponies are practically essential to scour this bit of country, which is at some distance from the main Nizampur road. Unfortunately, we visited this site in early June, as it was our one opportunity of going there under the auspices of Mr. Emerson, then A. C. Nowshera, who had ponies and guides laid on for us. Though the mid-day temperature was about 110° , we managed to cover a lot of ground and secure some good photographs.

On the East Bank, the main group of inscribed rocks is near the village of Ghariala some $4\frac{1}{2}$ miles from Campbellpur. The rocks are to be found on both sides of the road at the point where it starts to go steeply down to the broken Choi bridge, which once spanned the Haro. Adjacent on a bluff overlooking the river is the village of Ghariala. The other groups are the one visited by Mr. Cuthbert King on the Indus bank just up-stream of the confluence of the Haro, and the one reported in the bed of the Haro, which remained unlocated by us after a prolonged search.

THE TECHNIQUE OF THE ENGRAVINGS.

The engravings are all executed on the smooth flat surface of purplish black basalt boulders. The greater part of them are made by a series of peckings of the rock, probably with some form of metal tool. In some instances the pecking is much rougher than in others, the work at Mandori being on the whole better than that at the other sites, and that at Ghariala being for the most part rather crude and inferior.

The best pecked work can be seen in the round mirror-shaped objects on the top ridge of the most extensively engraved boulder in the main group at Mandori, here the closeness of the pecking has produced an almost uniform depressed surface. The engravings at Ghariala are for the most part linear and the pecking is often very crude and discontinuous. Another form of engraving is produced by a continuously chisled groove; these are not very common, but there is no reason to suppose they are not contemporary with the rest of the engravings.

Although these figures are sometimes spoken of as rock bruising, only a few specimens at Gandab (fig. 2) are true bruising. These are produced by the colour of the rock surface being changed by bruising it, the effect being to change the purplish black of the basalt boulder to a pale grey-brown. Little or nothing of this bruising can be felt by passing the finger tips over the surface of the rock, but, as can be seen from the unchalked illustration, the figures stand out quite plainly to

the eye, and have in fact the least crude outline of any, the shape of the battle axe for instance being most carefully depicted.

THE SUBJECT OF THE ENGRAVINGS.

The most important of the rocks show a mass of miscellaneous engravings, few if any bearing any relation to their neighbours, humans, animals, and abstractions being pecked out of the rock in aimless confusion.

The human figures are very crude and tend towards the extremes of simplification. Figures of men are quite common, for the most part they are disassociated with any other figure, occasionally they can be found riding a horse, an elephant or a camel. Groups, which are very infrequent, seem to be limited to two. One such group shows a man gripping another by the wrist with his left hand while he menaces him with a sword. Cuthbert King thinks that this may be commemorative of a treaty of fishing rights, but if they are striking hands on a bargain, it would be very out of place and against all experience of such customs for one of the participants to be waving a sword. Armed men are frequently equipped with sword, spear and a shield either round or rectangular, and in one instance (fig. 2) with a battle axe. Bows and arrows, so common in the rock paintings of Central India, are represented by only one example (fig. 4). Figures of women are scarce, but a gentleman with a peaked hat, waving a sword, seems to be 'making a pass' at a lady in a skirt and a similar peaked hat (fig. 17). Clothing is ill defined or absent in most cases, and though the contemporary people are certain to have worn a loin-cloth, the sex of the male figures is quite often strongly emphasized, as is also that of some of the animals.

There is a wide range of animal figures; oxen predominate followed by horses, elephants, two-humped camels, peacocks, elongated animals which may be meant to be crocodiles, and smaller animals which may be dogs. Some of the animal figures are as naturalistic as the proficiency of the artist would allow (figs. 9 and 10), but there are all degrees of stylization producing in some cases linear conventionalizations with no pretence of naturalism at all (figs. 12 and 13). Grouped with oxen one finds in two instances a man with something in his hands which may be a rope or a halter, with which he is about to secure the animal. It can be said with a considerable measure of certainty, that it will be unprofitable for anyone to follow up through these particular instances any hypothesis that may be put forward linking a not very well defined bull-cult in the Indus Cities of the Harappa period with the bull-cult of Crete, the section on the subject of dating which follows will adduce evidence which entirely precludes any such fancies.

Besides the human and animal figures there are a number of other signs, of which one of the most interesting is that found at Mandori, which shows a bullock cart viewed from above, there are three or four examples of this of which fig. 7 shows the most elaborate; here the bullocks are attached, and the wheels are disposed laterally so that they shall impress their roundness on the beholder.

The remaining designs are those abstractions which are usually termed symbols by anthropologists. Some of these are undoubtedly stylized humans (fig. 3), but the bulk of them are scribblings to which it is always tempting, but in reality quite futile, to assign a true meaning.

THE DATING OF THE ENGRAVINGS.

It will be as well to state straight away that no very high antiquity can be assigned to these engravings. Though there are in some instances varying techniques, and in others a considerable discrepancy in technical skill, there can be little doubt that the whole of these engravings are generally speaking contemporary. Some of the symbols such as concentric dotted circles, circles surrounding a cross, trident-shaped and other stylized human figures, are common in all periods and in many lands; the fact that it is possible to equate them with Bronze age or even Neolithic engravings in Europe has little real significance. The equipment of swords, shields and spears and the riding of horses and elephants precludes a very early date, but the whole matter is resolved by the fact that at Mandori there are two inscriptions in Kharoshti. These appear entirely to have escaped observation, which is not wholly to be wondered at, seeing that we photographed one of them without recognizing its existence; in fact, it was only on studying the photograph subsequently that it struck the eye. Having found one inscription we naturally made a close search for any others that might exist, and we finally discovered one, concealed by the fact that it was on the lower side of a projecting edge of rock.

The first inscription (fig. 15) is quite definitely of the same age as the strange group alongside it. This group shows a figure on the back of an elephant, supporting on each of his hands another figure, one male and the other female. The inscription appears to read as follows:—a-šo-ra-ti-re (te), and below śi. Kharoshti inscriptions are most tantalizing; they almost invariably give the impression that transliteration will be simple, but when one comes to do it, all manner of difficulties arise; one of the chief of these being the similarity between ra and ta, another is the fact that the scribe was not always very certain of his letters, and one gets a number of strange variants. Where one has a known dedicatory formula to help one, transliteration and translation even present no great diffi-

culty, but roughly executed proper names can be very puzzling. This scribe seems to bend his verticals; 'ti' cannot be any other letter, so the right hand or first letter is almost certainly 'a', in spite of the fact that he has apparently closed the loop.

The second inscription reads:—ta (ra)-ṣa-pa-la-sa and below a-si. With the exception of the rather wavy topped ta or ra, this inscription is quite clear. It is suggested, not very confidently, that it indicates 'of Tashapala the Asi' or of the tribe of the Asii, a branch of the Yueh-chi. The closed form of 'sa' is an early rather than a later form of Kharoshti, and, on the general style, the early Saka period or about 50 B.C. is suggested for these inscriptions. If, as it appears, these inscriptions are immediately contemporary with at least some of the engravings, then a general dating of 200 B.C.—200 A.D. ought to cover the majority if not all of them.

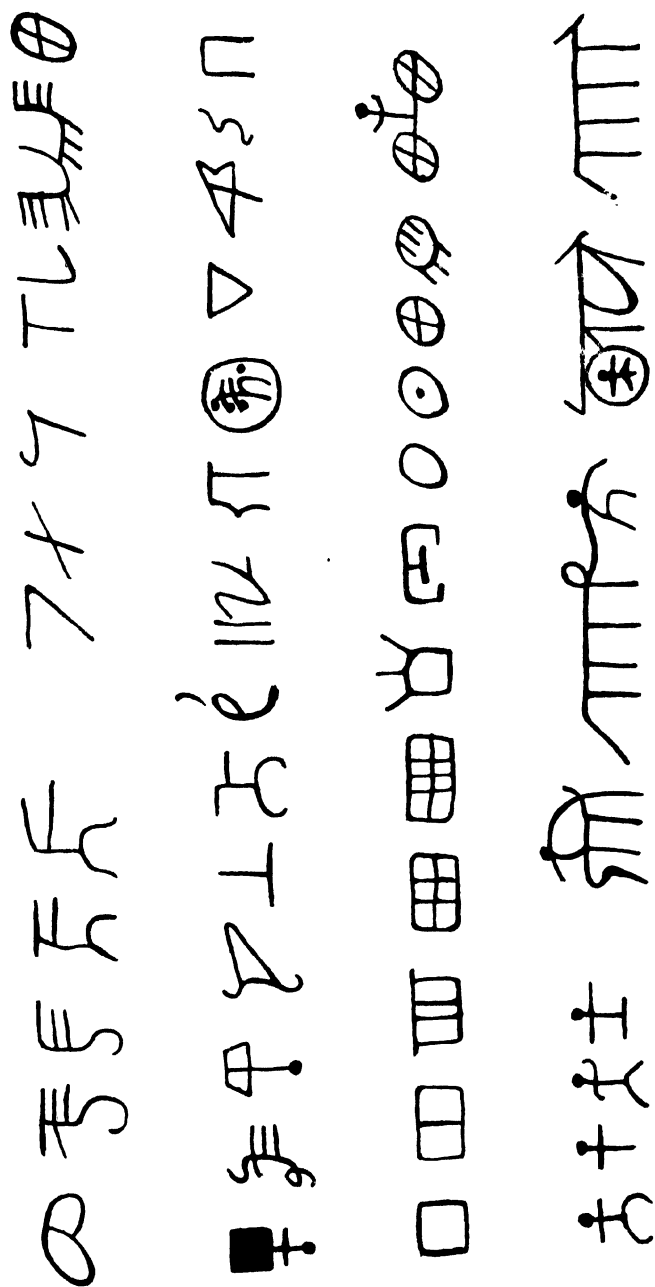
In the immediate vicinity of any of these rocks there are no surface finds of pottery which might help in dating the engravings, not that such pottery would necessarily be contemporary. Close outside Ghariala village pot fragments of the Buddhist period may be found, and close to a small village about one mile up-stream from the rocks of Mandori we found a terracotta figure of an ox, also of the Buddhist period. Such indications as these are seen to confirm a c. 200 B.C.—200 A.D. dating.

THE ROCK PAINTINGS OF CHARGUL.

The only objects which, in this general neighbourhood, are in any way comparable to these engravings are the rock paintings of Chargul. These rock paintings were brought to the notice of Lieut. C. Maxwell, R.E., who was investigating Buddhist remains in the vicinity of Shahbazgarhi, by Maizullah Khan, then Malik of Chargul. Lieut. Maxwell investigated the paintings in 1882 and published a complete set of drawings which are far from widely known. The paintings are for the most part in a rock shelter in the Western side of the Hill Doda overlooking the village of Chargul. To reach this one takes the Rustam road from Shahbazgarhi till one reaches the Hamzakot Canal Bungalow, just short of the 9th mile stone. Here one goes East up the Hamzakot Canal for about a mile, then on foot $1\frac{1}{2}$ miles due South to Chargul. We visited the site in 1938, and were fortunate enough to meet the present malik of the village, Azimullah Khan the son of Maizullah Khan. A party took us up to the shelter, which is unfortunately impossible of access except by means of ropes or scaffolding. Though we were used to taking chances in the rock shelters of the Mahadeo Hills we found after a trial that, without some such aids, it was impossible to see the paintings except through field glasses at a range of some thirty feet. There is however one group of paintings outside the shelter which are easily accessible. Of

these paintings General Alexander Cunningham wrote: 'I am afraid that the cave paintings are not writing at all, but only boyish sketches of animals—a sort of Afghan Noah's ark'. This is not very convincing; the whole number of pictographs are divided as follows:—Animals 73, of which twelve are horses with riders; there are eleven stylized human figures excluding the riders, and there are 57 symbols of which at least 25 have an alphibetiform character; in addition to these there are four pictographs which represent some sort of cart or chariot. The accompanying plate, No. 4, shows examples of all these types. The lower fringe of the hill Doda shows a profusion of remains of Buddhist stone walling, which however is not necessarily contemporary with the paintings.

It is suggested that all these pictographs and petrographs date from the close of the 1st millennium B.C. and the early centuries of the 1st millennium A.D., a dating which covers also a large number of the rock paintings found elsewhere in India. It is hoped that this note will serve to bring into greater prominence these interesting but on the whole little known objects.



First line shows two groups of consecutive alphabetiforms; second and third lines show alphabetiforms and square and circle symbols which are interspersed by animal signs, and a chariot symbol; the fourth line shows typical examples of human and animal figures.



FIG. 1. Horsemen, figures and symbols, Gandab.



FIG. 2. Group of warriors, Gandab.

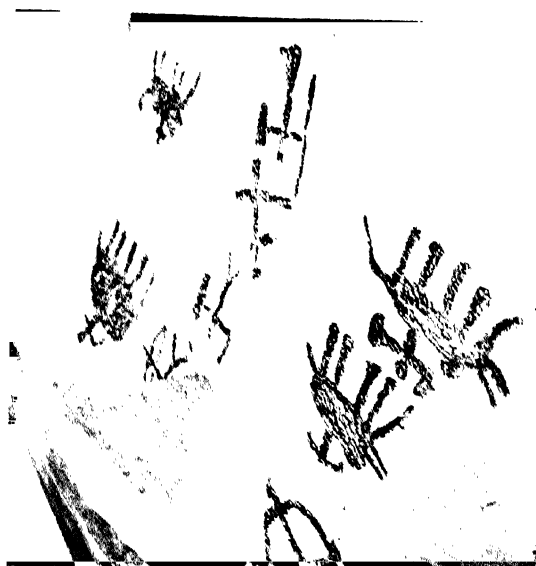


FIG. 4. Elephant riders, and warriors including an archer. Man. I. ci.



FIG. 3. Figures and symbols, Ghariala.



FIG. 5. Figure group, Gandab.

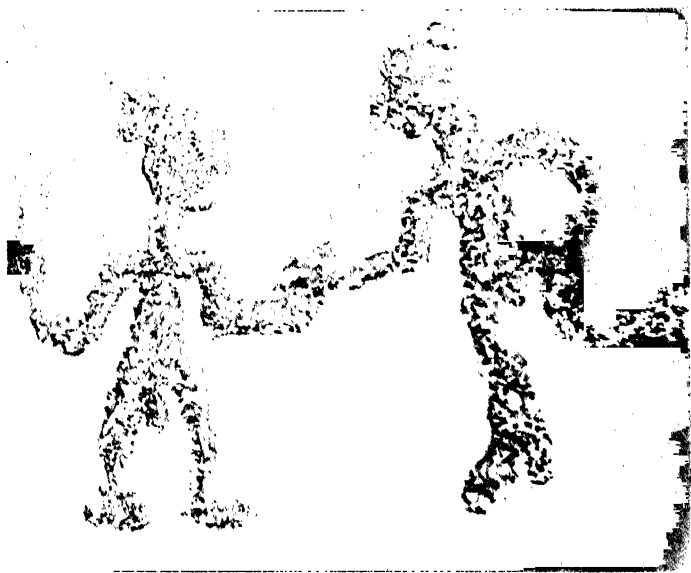


FIG. 6. Figure group, Mandor



FIG. 8. *Syncoils charioteer.*

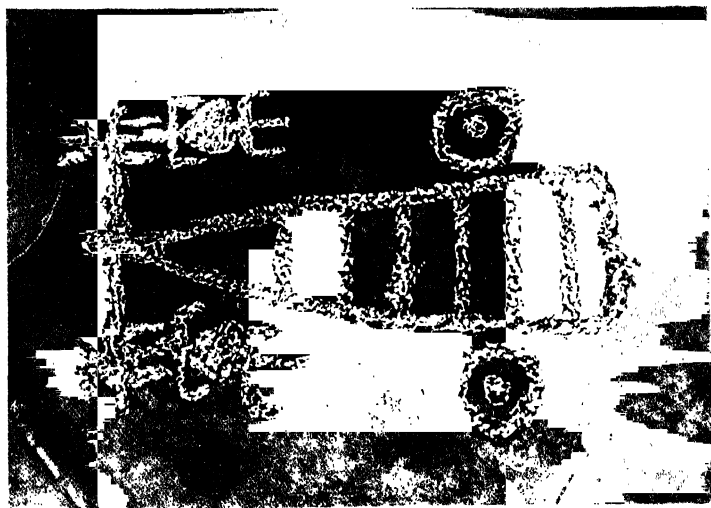


FIG. 7. *Bullock cart, Mandori.*

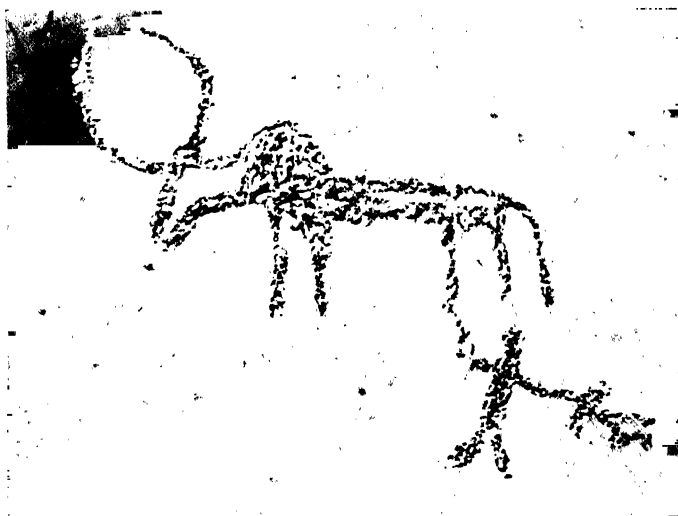


FIG. 9. Man and bull, Ghariala.



FIG. 10. Man and bull, Ghariala.

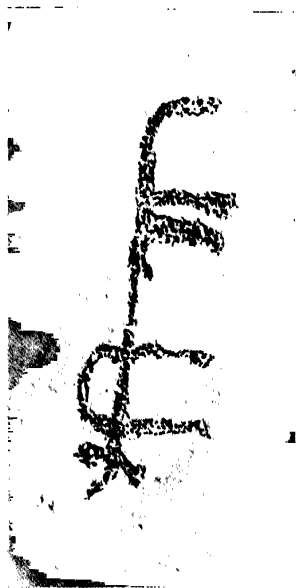


FIG. 13. Bull, Ghariala.

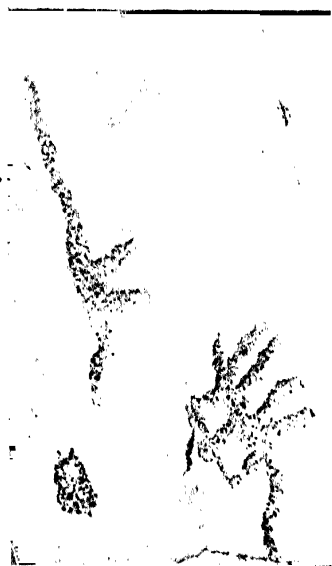


FIG. 14. Camel and peacock, Mandori.

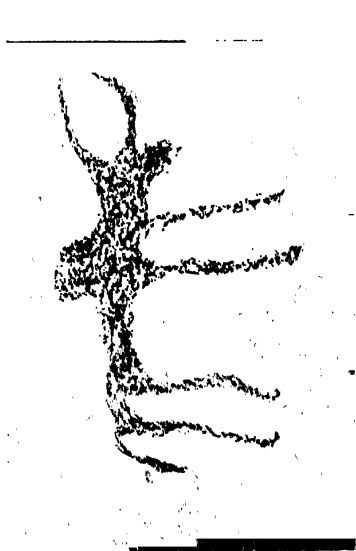


FIG. 11.

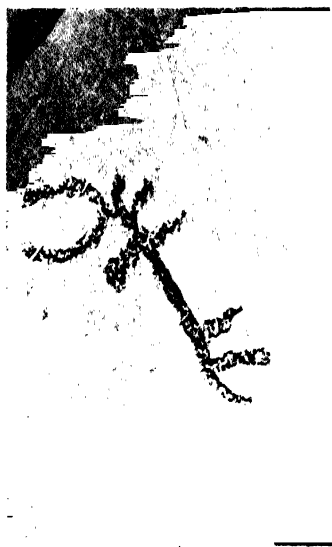


FIG. 11 (top) Ox, and FIG. 12 (bottom) Bull, Gandab.



FIG. 15. Mythological figures and inscription, Mandori.

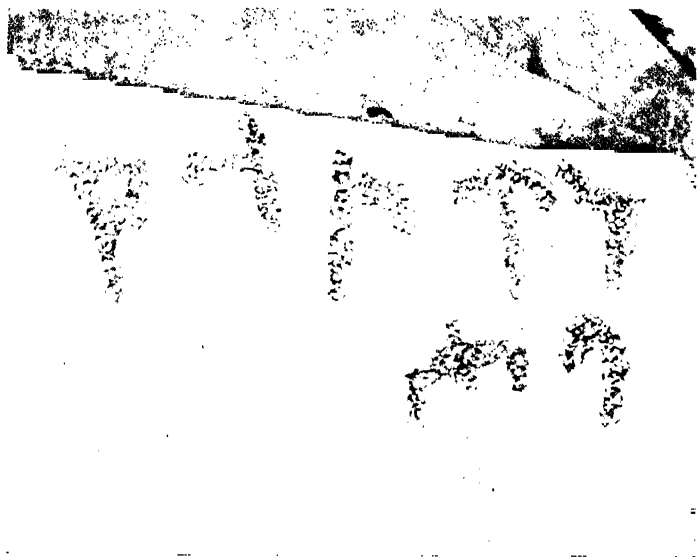


FIG. 16. Kharoshti inscription, Mandori.

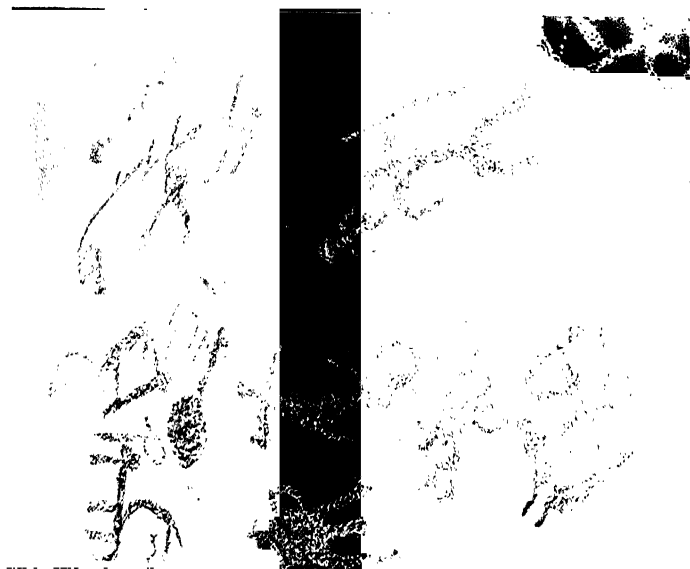


FIG. 18. Figure and symbols, Mandora.

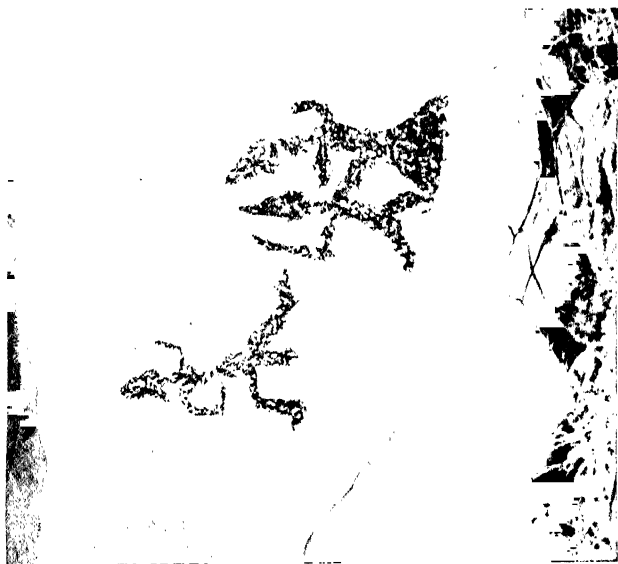


FIG. 17. Men and women, Gandab.

The Sohgaura Copper-plate Inscription.

By S. N. CHAKRAVARTI.

(Communicated by J. C. De.)

The copper-plate containing the inscription was discovered in the district of Gorakhpur, and presented to the Asiatic Society of Bengal by Dr. Hoey¹. The inscription was first edited by Bühler², and subsequently by Fleet³, Barua⁴ and Jayaswal⁵. But it remains still unsolved. I am dealing with the inscription from the original plate in the Royal Asiatic Society of Bengal, and from the illustrations in the *Journal of the Royal Asiatic Society of Great Britain and Ireland* (1907)—the Asiatic Society's photograph and Sir George Grierson's electrotpe copy.

The inscription contains four lines of writing in Brāhmī character of the Mauryan period. The *alphabet* remarkably resembles that of the Mauryan Brāhmī Inscription of Mahāsthān.⁶ The peculiar *ma*'s on the Mahāsthān stone and those in our plate agree in shape. Again, the notched *ya* and the letter *sa* in a form resembling *sha*, which are used commonly in the Mahāsthān inscription, occur, though in rare instances, as in *Manavasiti*- (l. 1), *-yavani* (l. 3) and *vaya* (l. 4).

The *language* of our inscription is the same as the one used in the Mahāsthān inscription. It is the western variety of the *Prāchya* dialect in which *la* is substituted for *ra*, the nominative singular of *a*-stem ends in *e* instead of *o*, and the dental *sa* only is used. The eastern variety of the *Prāchya* dialect, however, is characterized by the use of the palatal *śa* only.

The Sohgaura plate was cast into several copies and is a circular notice issued by the *Council of Mahamatras of Sravasti* to the illustrious ministers, and is a document connected with famine relief measures.

TEXT.

- 1 Savatīyana Mahamatana sasane Manavasiti-ka-
- 2 da sili-māte (.) Usagame'va eta dava kothagalani
- 3 ti[la*]-yavani mathu-lacha-chamodamma-bhalakana va-
- 4 ya kayiyati(;) atiyāyikaya no gahimtavayo(.)

¹ The first photo-etching of the plate was published, with some remarks on it by Hoey, Vincent Smith and Hoernle, in the Society's Proceedings for 1894, pp. 84ff.

² *Vienna Ori. Journ.*, Vol. X, pp. 138ff., and *Ind. Ant.*, Vol. XXV, pp. 261ff.

³ *J.R.A.S.*, 1907, pp. 510ff.

⁴ *Ann. Bhand. Ori. Res. Ins.*, Vol. XI, pp. 32ff.

⁵ *Ep. Ind.*, Vol. XXII, pp. 1ff.

⁶ *Ibid.*, Vol. XXI, pp. 83ff.

COMMENTS ON THE TEXT.

- Line 1.** Jayaswal read *Savastīyāna*. But the third character is not a ligature. It is the very common *ta* with the angle just below the vertical line. *Sasane* (*sāsane*), in the Māgadhi nominative singular, is equivalent to the Sanskrit *sāsanam*. *Kaḍa* (*kaḍā*), in the ablative singular; *kaḍa* has the same meaning as the Sanskrit *kaṭaka*, 'camp'.
- Line 2.** *Sili* (*siri*) is equivalent to the Sanskrit *śrī* and to the Pāli *sirī*. *Māte* or *amāte*, the expected form being *amātiye*, corresponds to the Sanskrit *amātyān* and the Pāli *amacce*; *sili-māte*, 'to the illustrious ministers'. *Usagame* (*usāgame*) stands, as Jayaswal suggested, for *uss-āgame*, which corresponds to the Sanskrit *ushmā-game* and to the Pāli *usmā-game*. Bühler, Fleet, Barua and Jayaswal read *ete*. The *e-mātrā* to *t* is not traceable in Dr. Grierson's electro-type copy. In the Asiatic Society's photograph what looks like an *e-mātrā*, a slanting upward stroke to the left of the top end of *t*¹, is due to a defect in the surface. The *e*-vowel mark is expressed here and in the Mahāsthān inscription by a short horizontal stroke to the left of the top end of an *akshara*. *Eta* stands for *ete* (cf. *eta pi prāṇa trayo*... in Aśoka's Rock-edict I at Shahbazgarhi). Bühler, Fleet and Barua read *duve*, Jayaswal, *dave*. According to Jayaswal the word "seems to be connected with the technical term of the Maurya period *dravya* in connection with Government stores, e.g., *dravya-pāla* (*Arthasāstra*, Ch. 38)".
- Line 3.** *Tīla-yavāni* stands for *tila-yavāni*, 'sesamum and barley'. *Mathu* is equivalent to *madhu*, 'honey'; *lacha* (*lācha*) to *lāja*, 'parched grain'; *achamoda* to the Sanskrit *ajamoda* and to the Pāli *ajamoja*, 'aniseed'; *aṁma* to *amba*, 'a species of grain'. *Bhālākāna* (*bhālakāna*) is equivalent to the Sanskrit *bhāarakāṇām* and to the Pāli *bhāarakāṇam*.
- Line 4.** *Vaya*: the first letter is not *chh*. The indistinct vertical line within the circle is due to a defect in the surface. It is not a downward extension of the vertical part of the letter. The last letter is the notched *y*. *Vaya* (*vayam*) is equivalent to the Sanskrit *vyayam*, 'expense'. *Kayiyati* (*kayyīyati*) is clearly a denominative in *īya* from *kayya*, Sanskrit *kārya*, 'that which is to be done'; *Vaya kayiyati*,

¹ In later inscriptions the *e-mātrā* is marked by a slanting upward stroke appended to the left of the top line of an *akshara*.

'to be spent'. *Atiyāyikaya no gahimtavayo*: the Mauryan Brāhmī Inscription of Mahāsthān, another document relating to famine relief measures, speaks of *atiyāyika* and *su-atiyāyika*. According to Bhandarkar it is *su-atiyāyika* which is probably understood at the end of the Sohgaura copper-plate. I would ascribe the dropping of *su* in the Sohgaura copper-plate to the carelessness of the scribe. Another instance is found in the dropping of *la* in the word *tila*. Bhandarkar translates the whole clause as follows: "nothing should be taken in excess (of plenty)". But I would translate it thus: 'for (times of) prosperity (this order) is not meant.' This sense appears to be supported by the symbolic devices, which I will discuss afterwards.

With the above introduction, I give my translation of the text as follows:—

The order of the Mahāmātras of Śrāvastī, (issued) from the Manavasiti camp, to the illustrious ministers.

Only on the advent of drought, loads of sesamum and barley, honey, parched grain, aniseed, and amba grain in the 'dravya store houses', are to be spent; for (times of) prosperity (this order) is not meant.

SYMBOLS.

The upper face of the plate on which the symbolic devices are found may be divided into three fields. Beginning from the left, in the first field are a leafsome tree in railing, a store house and a ladle. The second field exhibits "a crescent (moon) on a hill-like combination and next to it a large Mo". In the third field are a leafless tree in railing and a store house larger than the one in the first field.

Jayaswal explains the devices in the second field as denoting "an imperial monogram for Chandra(gupta) M(aurya)": the crescent stands for *Chandra*; the hill-like combination, the upper loop of which is *g* and the lower loops *tt*, for *gutta*; and the large *Mo* for *Maurya*. He also explains the devices in the first and third fields. "The two trees," says he, "probably signify the drought stage from leafsome to leafless, and the houses for stores." But he has not explained the presence of the ladle in the first field and its absence in the third field. It is obvious that the devices in the first field denote the stage of plenty and those in the third field the drought stage. Thus the smaller store house with the ladle signifies restricted distribution of food and seeds in times of prosperity, while the larger store house without the ladle indicates unrestricted distribution of the same in times of adversity.

Time Indications in the Baudhāyana Śrauta Sūtra.

By P. C. SENGUPTA.

(Communicated by Prof. M. N. Saha.)

In the *Baudhāyana Śrauta Sūtra*¹, the rules for beginning the year-long sacrifices are stated in the following terms:—

“ते चतुरह् पुरस्तान्माघ्यै पौर्णमास्यै दीक्षन्ते तेषामष्टकायां क्रयः सम्पद्यते इति नु यदि समामविज्ञाय दीक्षन्ते । यद्यु वा एतस्यामेवैकाष्टकायां समां विजिज्ञासन्ते चतुरह् एव पुरस्तात् फाल्गुन्यै वा चैत्र्यै वा पौर्णमास्यै दीक्षन्ते । तेषामपरपक्षस्याष्टक्यां क्रयः संपद्यते । तेनैकाष्टकां न ह्रस्वत् कुर्वन्ति । तेषां पूर्वपक्षे सत्या संपद्यते । पूर्वपक्षं मासा अभिसम्पद्यन्ते ।”

Baudhāyana Śrauta Sūtra, XVI, 13.

‘They consecrate themselves four days before the full-moon day of *Māgha*; thus their purchase of *soma* falls on the day of the last quarter (*Ekāṣṭakā*). This would be the rule if they consecrate themselves without knowing the (beginning of the) year. If, however, they want to know the (*i.e.* beginning of the) year on the day of the last quarter of *Māgha* (*Ekāṣṭakā*, *i.e.* when the first day of the year has already been passed), they should consecrate themselves four days before, either the full-moon day of *Phālguna* or the full-moon day of *Caitra*; their purchase of *soma* would then fall on the 8th day of the dark-half. By this they do not make the last quarter (*Ekāṣṭakā*) void. Their *sutyā* (*i.e.* extraction of *soma* juice) falls in the first half (*i.e.* light half) of the month, and the (sacrificial) months begin in the first (or light) half.’

All this reads like a slightly modified extract from the *Taittirīya Samhitā* (VII, 4, 8) or from the *Tāṇḍya Brāhmaṇa* (V, 9) which has been quoted and explained in my previous

¹ Edited by Caland, 1904–1913 A.D., published by the *Asiat. Soc. of Bengal*. The present paper modifies my interpretation of this rule of *Baudhāyana* and also the date arrived at from it, in the paper ‘Solstice Days in Vedic Literature’, published in the *JRASBL*, Vol. IV, 1938, page 429.

paper, 'Solstice Days in Vedic Literature'.¹ The author of the *Baudhāyana Śrauta Sūtra* here recommends the following of the former rules by the performers of year-long sacrifices. The rule of beginning these sacrifices four days before full-moon near the *Phalgunis*, is the oldest that can be traced in the *Brāhmaṇas*. The alternative rule for beginning these year-long sacrifices four days before the full-moon day of *Māgha*, was true for the time of the *Taittirīya Samhitā* or of the *Pāṇḍavas*, i.e. for about the time when the sun reached the winter solstice on the full-moon day of the Vedic standard month of *Māgha*. *Baudhāyana* seems to say that on the day of the last quarter of *Māgha*, the year-beginning or the winter-solstice day was already over in his time. Clearly then he does not mean the Vedic standard month of *Māgha* when giving his rule. His idea perhaps was that the sun reached the winter solstice on the earliest possible day of the full-moon of *Māgha*, and that the winter-solstice day was inevitably over on the last quarter following it. By a full-moon day of *Māgha*, he probably means a day like the 30th of January, 1934 A.D. Nowadays the winter-solstice day is the 22nd of December. This would show a precession of the solstice-day by 39 days, and at the rate of one day of precession in 74 years, it would indicate a time of about 953 B.C., about when, the day of the last quarter of the month of *Pauṣa*, and not of *Māgha*, could be near to the winter-solstice day. We shall not be wrong to assume that this *Śrauta Sūtra* speaks of a time of about 900 B.C.

This work does not say that the *Kṛttikās* (*Pleiades*) are first of the *nakṣatras*, as we find enumerated in the *Taittirīya Samhitā*.² Nor does it speak simultaneously of the full-moon days at the *Kṛttikās* and the *Maghās*³—a statement which is very significant as the *Pleiades* (η *Tauri*) and the star *Regulus* (*Maghā*) have a difference in longitude of very nearly 90°. We miss here statements like that of the *Kapiṣṭhala Kaṭha Samhitā*, (a) प्रजापतेर्वीर्यतश्चिरो यत्कृत्तिकाः⁴ (b) पूर्णमासे वामावस्थायां यजेत⁵ or of the *Maitrāyaṇī Samhitā*, (c) प्रजापतिर्वीर्याययतो⁶ which mean, 'the *Kṛttikās* are the head of *Prajāpati* (year), that sacrifices are to be made on the full-moon or new-moon day and that *Prajāpati* is the day of the full-moon at the vernal equinox (*āgrayana*)'. All these statements mean a time about a hundred years before or after the year 2350 B.C. This *Śrauta Sūtra* has no statements of the type quoted above.

¹ JRASBL, Vol. IV, 1938, pp. 425-429.

² *Taittirīya Samhitā*, IV, 4, 10.

³ *Mahābhārata*, Vana, 84, 51-52.

⁴ and ⁵ *Kap. K. Samhitā*, VI, 6.

⁶ *Maitrāyaṇī Samhitā*, IV, 6, 4.

In another place (XII, 1; Caland's Edn., Vol. II, page 85), Baudhāyana lays down the following rule for beginning the *Rājasūya* sacrifices:—

राजसूयेन यज्यमाणो भवति स पुरस्तात् पाशुन्यै वा चैत्र्यै वा
पौर्णमास्या अमावास्येन हविषेष्टा दीक्षते ।

'When a prince is being religiously served with the *Rājasūya* sacrifice, he consecrates himself by making oblations of clarified butter, on the new-moon day which precedes the full-moon day either of *Phālguna* or of *Caitra*.'

It is difficult to see what season of the year is taken to begin on the new-moon which precedes the full-moon either of *Phālguna* or of *Caitra*. The former of these new-moons simply means the new moon of *Māgha*, which is but a repetition of an older tradition of the winter-solstice day as stated in the *Kauṣītaki Brāhmaṇa*¹ (XIX, 3). The *Mahābhārata* indicates, according to our interpretation, that Yudhiṣṭhira was consecrated for the *Aśvamedha* sacrifice on the full-moon day of *Caitra* of the year 2446 B.C. The Vedic standard month of *Māgha* as it came that year was similar to that of our time in 1932 A.D., and the full-moon day of *Caitra* of 2446 B.C. corresponded with the full-moon day of April 20, 1932 A.D. The new-moon day which preceded this full-moon happened on the 6th April, 1932 A.D. If the *Baudhāyana* rule indicates that spring began according to this recorded tradition, the date when this was true would become about 1400 B.C. If Baudhāyana means a year like 1927 A.D. on which the new-moon in question happened on April 2, the date would come out to have been about 1100 B.C. If again, it was a new-moon of the type of March 30, 1930 A.D., the date of the tradition would be about 886 B.C. In any case we do not get any clear indication of time from this reference. We shall, however, later on find the day for starting the *Rājasūya* sacrifice in the year 886 B.C. A more definite indication of the date of this *Śrauta Sūtra* is furnished by the:—

BAUDHĀYANA RULE FOR *Nakṣatreṣṭi* SACRIFICES.

The part of the work where it gives the time for beginning the *Nakṣatreṣṭi* sacrifices², runs as follows:—

अथातो नक्षत्रेष्टीर्थाख्यास्यामोऽग्निर्वै अकामयताम्रादो देवानां
स्यामिति ता ब्राह्मणेन व्याख्याताः । सा या वैशाखाः पौर्णमास्याः

¹ JRASBL, Vol. IV, 1938; page 422.

² *Baudhāyana Śrauta Sūtra*, XXVIII, 3-4.

दुरक्षादमावास्या भवति स सद्यत् संवत्सरस्यापभरणौभिः संपद्यते
तस्यामारभेतेति ।

‘We now proceed to explain the rule for performing the *Nakṣatresthi* sacrifices. Agni wished, “I would be the partaker of food for the gods.” This has been set forth by the *Brāhmaṇa* (Tt. Br. III, 1, 4 *et seq.* as found by Caland). The full-moon which occurs near the *Viśākhās*, has its preceding new-moon once in the year in the *Bharanī* division, this new-moon is the day for starting the *Nakṣatresthi* sacrifices.’

A little later the rules run as follows:—

विशेषान् व्याख्यास्यामः । प्रजापतिः सवितेत्युपांशुः सर्पेभ्य आश्रेबाभ्य
आज्ये करम्भमिति सर्वे यवा भवन्ति ।

‘We shall now explain the special rules: *Prajāpati*, the sun becomes *Upāṁśu* (of subdued light due to the starting of the rains) on getting at the *Aśleṣā* division. Hence all barley corns become *Karambha* (barley powder mixed with curd) which are to be mixed with clarified butter for oblations.’

Here evidently the sun is said to reach the vernal equinox on the new-moon which preceded the full-moon in the *Viśākhā* division or near the *Viśākhā* ‘junction’ star. Such a new-moon was of rare occurrence. Also the sun seemed to turn south at the beginning of the division *Aśleṣā*, and not at its middle. True it is that this *Śrauta Sūtra* says:—

माघमासे धनिष्ठाभिस्तरेणैति भानुमान् ।

अर्घ्याश्लेषस्य आवणस्य दक्षिणोपनिवर्त्तते ॥ इति काश्वे भवतः ।

B. *Śrauta Sūtra*, XXVI, 29.

‘In the month of *Māgha* the sun on getting at the *Nakṣatra* division *Dhaniṣṭhā*, turns to the north and at the middle of the *Aśleṣā* division turns to the south in the month *Śravana*. These are the two limits to the sun’s north-south motion.’

This is evidently borrowed from the *Vedāṅgas*. This position of the solstices was not true for the time of the *Baudhāyana Śrauta Sūtra*.

We understand that at the time indicated by *Nakṣatresthi* rules of *Baudhāyana*, the summer solstice was at the beginning of the *Aśleṣā* division, that the vernal equinox was consequently at the end of the first quarter of the *Bharanī* division, and winter solstice was at the middle of the *Śravana* division.

Now the oldest division of the ecliptic began with the ecliptic position of β -*Delphinis* as the first point of the *Dhaniṣṭhā* division.

The longitude of β -*Delphinis* in 1935 A.D. = $315^\circ 26' 5''$
 Deduct half *nakṣatra* $6^\circ 40' 0''$,

the longitude of the middle of *Śravaṇā*
 division = $308^\circ 46' 5''$
 Again deduct $270^\circ 0' 0''$

Hence the longitude of the end of the 1st
 quarter of *Bharanī* division (1935) = $38^\circ 46' 5''$.

Now the longitude of the sun at Calcutta Mean Noon on April 30, 1938 A.D., a new-moon day, was = $39^\circ 14' 34''$.

This fairly agrees with the longitude of the last point of the 1st quarter of the *Bharanī* division obtained above.

Here a shifting of the equinoxes till 1938 A.D., of $39^\circ 14' 34''$, indicates a lapse of 2,828 years and the date arrived at becomes 891 B.C. If we want to get at a year near to this date and similar to 1938 A.D., that year becomes 886 B.C. or -885 A.D.

This date appears to be the time indicated by the *Nakṣatresthi* rule of the *Baudhāyana Śrauta Sūtra*.

BAUDHĀYANA RULE FOR THE *Pañcaśārādiya* SACRIFICES.

In another place the *Baudhāyana Śrauta Sūtra* lays down the following rule for beginning the *Pañcaśārādiya* sacrifices. These lasted for 5 years and were begun with the advent of the Indian season of *Hemanta* or of the dew and ended with the Indian season of *Śarat* or autumn. Hence on the day for the beginning of this *Pañcaśārādiya* sacrifices, the desired celestial longitude of the sun was about 210° . The *Baudhāyana* rule runs as follows:—

पञ्चशरदीयेन यच्चमाणा भवति स उपकल्पयते सप्तदश
 निरयान् वत्सतरान् एकहायनान् स पुरस्तान् मार्गशीर्षे पौर्णमास्या
 आमावास्याेन हविषेष्टा सप्तदशमासतौः पृथ्वीर्वत्सतरारालभते ।

(*B. Ś. Sūtra*, XVIII, 11.)

‘When a person is being served by the five yearly sacrifice, he selects seventeen he-calves which are more than 8 days old and of not exceeding one year in age. He makes the sacrifice with oblations of clarified butter on the new-moon which precedes the full-moon at the star group *Mṛgaśīras*¹ (i.e. λ , ϕ_1 , and ϕ_2 , *Orionis*) and secures seventeen she-calves of which the presiding deities are the *Maruts* or wind gods.’

¹ Cf. *Āpastamba Grhya Sūtra*, XIX, 8-3-2, which records a tradition of the beginning of *Hemanta* on the *Mṛgaśīras* full-moon day which corresponds to a mean date of about 2000 B.C.

The practice was to release 17 he-calves and 17 she-calves for freely roaming about in the fields or forests in the 1st year, 17 she-calves in the 2nd year, 17 she-calves in the 3rd year and 17 she-calves in the fourth year were also set at liberty. It is not clear if in the fifth year also the same practice was continued. The day for beginning the sacrifice was of the new-moon preceding the full-moon at the *Mṛgashiras* group.

Now in the year 1929 A.D., the full-moon near λ *Orionis* fell on December 16; and the preceding new-moon happened on December 1. We assume here that the sun's longitude increased by 60° in two lunations very nearly. Hence the sun reached the winter solstice on the day which corresponds with the new-moon on the 29th January, 1930 A.D.

On this day, i.e. January 29, 1930, at G.M.N. the sun's apparent longitude was . . . = $308^\circ 53' 1''$,

Deduct . . . = $270^\circ 0' 0''$,

\therefore the remainder $38^\circ 53' 1''$ represents the shifting of the solstices till 1930 A.D. The date arrived at becomes — 885 A.D. which is the same as derived from the rule for beginning the *Nakṣatreṣṭi* sacrifices. The following back calculation for the year 887-886 B.C. shows the beginnings of the seasons and the days for the beginnings of these sacrifices.

Julian Calendar	Julian days	At G. M. Noon		Remarks
		Appt. Sun	Appt. Moon	
— 886 Nov. 1	1397751	$210^\circ 40'$	$212^\circ 36'$	<i>Hemanta</i> begins with this N. M. day. <i>Pañcaśārāḍya</i> to start.
— 886 Nov. 16	1397766	$225^\circ 58'$	$50^\circ 48'$	F. M. at λ <i>Orionis</i> about 10 hrs. before.
— 886 Dec. 30	1397810	$270^\circ 50'$	$266^\circ 1'$	N. M. one day after winter solstice at the middle of <i>Śravaṇā</i> division.
— 885 Feb. 27	1397869	$329^\circ 48'$	$321^\circ 34'$	N. M. $16\frac{1}{2}$ hrs. later. <i>Rājasūya</i> to start.
— 885 Mar. 29	1397899	$359^\circ 0'$	$357^\circ 57'$	N. M. near vernal equinox at the end of the 1st quarter of <i>Bharaṇī</i> . <i>Nakṣatreṣṭi</i> to start.
— 885 Apr. 13	1397914	$13^\circ 27'$	$202^\circ 23'$	F. M. in <i>Viśākhā</i> , 18 hrs. before.

The small discrepancies which the above calculations show with the Baudhāyana statements are negligible. These state-

ments of the *Śrauta Sūtra* are not and cannot be very accurate. It should be noted in this connection that for the year —886 A.D.

λ <i>Orionis</i> had a celestial long. of about	..	43° 40'
α <i>Libra</i> " " "	..	185° 5'
<i>i</i> <i>Libra</i> " " "	..	191° 0'

α *Libra* and *i* *Libra* are the two stars in the *Viśākhā* division.

Again, in this year —886 A.D.,		
the longitude of the end of the 1st qr. of <i>Bharanī</i>	=	359° 39'
" " " 1st pt. of the <i>Viśākhā</i> division	=	182° 59'
" " " " " <i>Mṛgaśīras</i> "	=	36° 19'
" " " mid-point of the <i>Śravaṇā</i> "	=	269° 39'

Thus the year 887-86 B.C. appears to be the mean date indicated by the *Baudhāyana* rules for beginning the *Nakṣatreṣṭi*, the *Pañcaśāradyā* and the *Rājasūya* sacrifices. This date, however, is liable to being raised or lowered by 76 years or by even a greater luni-solar period.

We now take up the *Baudhāyana* rules for setting up fires by the householder. The rules in question state the suitable or auspicious days for the purpose and have nothing to do with the beginnings of the seasons. The auspicious days are the new-moon days at (1) *Kṛttikās*, (2) *Rohiṇī*s, (3) *Punarvasus*, (4) *P. Phalgunis*, (5) *U. Phalgunis* and (6) *Citrā*. A Brahmin is to set up his fires in spring, a Kṣatriya in summer, a Vaiśya in autumn and a car-maker in the rains.¹ In this connection it is said:—

(a) या वैशाखाः पौर्णमास्या उपरिष्टादमावास्या भवति सा सङ्घत् संवत्सरस्य रोहिण्या सम्पद्यते तस्यामादधीत ।

‘The new-moon which follows the full-moon in the *Viśākhā* division, once happens in a year with the moon in the *Rohiṇī* division, that is the day on which the fires are to be set up.’

This rule states when to get at the day of a new-moon in the *Rohiṇī Nakṣatra*. There is another rule given for settling when to get at a new-moon near the *Punarvasus* (*Castor* and *Pollux*).

(b) या आषाढाः पौर्णमास्याः पुरस्तादमावास्या भवति सा सङ्घत् संवत्सरस्य पुनर्वसुभ्यां संपद्यते तस्यामादधीतेति ।²

‘The new-moon which precedes the full-moon in the *Nakṣatra Āṣāḍhā* (here the *U. Āṣāḍhā*), once (i.e. on rare occasions) happens in a year with the moon near the *Punarvasus* (*Castor* and *Pollux*); the fires should be set up on this day.’

These are purely luni-solar-stellar phenomena which repeat roughly in 8, 11 or 19 years. The *Rohiṇī* and the *Punarvasu*

¹ *Baudhāyana S. Sūtra*, II, 12.

² *Ibid.*, III, I: this is also repeated in XXIV, 18.

new-moons answering to the above description happened in the year 884 B.C., as the following calculation will show:—

Year and date	Julian days	At G.M.N.		Remarks.
		Appt. Sun	Appt. Moon	
— 883 A.D. April 19	1398651	19° 41'	194° 27'	F. M. in <i>Viśākhā</i> Dn.
— 883 A.D. May 4	1398666	34° 1'	23° 48'	N. M. in <i>Bharaṇī</i> Dn. for setting up fires.
— 883 A.D. June 3	1398696	62° 34'	58° 45'	N. M. in <i>Punarvasu</i> Dn. for setting up fires.
— 883 A.D. June 17	1398710	75° 54'	253° 0'	F. M. in <i>U. Āṣādhā</i> Dn.

Viśākhā division = 182° 59' to 196° 19'

Punarvasu division = 62° 59' to 76° 19'

Long. of *Pollux* = 73° 14'

It is evident that such new-moons came in also in the year 895 B.C., i.e. 8 years before the date 887 B.C. arrived at before. The *Śatapatha Brāhmaṇa*¹ lays down the rule that fires should be set up, on the day of the new-moon with which the lunar *Vaiśākhā* ended, meaning of course the new-moon, either at the *Kṛttikās* or the *Hyades (Rohiṇī)*. These rules for setting up fires by a householder have nothing to do with the beginning of any season of the year and do not indicate the date of the *Baudhāyana Sūtra*, nor of the *Śatapatha Brāhmaṇa*, nor of any other work of the kind.

We are thus led to conclude that the mean date for the *Baudhāyana* rules for sacrifices should be taken as the year 887-86 B.C.

One point more that we want to notice here is that the *Baudhāyana Śrauta Sūtra* mentions the name Pāṇini in the *Pravara* section 3 (Vol. III, page 418) and also the name Kaulāśva Yāska in XVI, 27. Whether these statements place the dates of the celebrated grammarian and the author of the Vedic lexicon, *Nirukta*, before the time of the *Baudhāyana Śrauta Sūtra* (900 B.C. nearly), is a matter that cannot be settled astronomically. True it is that the word 'Yavanāni' as found in Pāṇini means the written alphabet of the Ionian Greeks, but it would be far from rational to conclude that the Yavanas did not come to India before the times of Alexander or of Darius.

¹ *Śatapatha Brāhmaṇa*, XI, 1, 1, 7; cited by S. B. Dīkṣita in his भारतीय ज्योतिःशास्त्र, page 130 (1st. Edn.) योसो वैशाखस्यामावास्या तस्या-मादधीत.....आद्यन्येवैतत् प्रजायां पशुषु प्रतिनिष्ठति ।

Some Dates in the Pāla and Sena Records.

By R. C. MAJUMDAR.

It is well known that the chronology of the Pāla kings has been fixed by calculating the known reign-periods of kings with reference to certain fixed dates or events of approximately known date. As such the correct reading of the dates of the Pāla and early Sena kings, particularly of those which are last-known dates of kings, is of special importance. Recently I examined the dates of many such records, and I have great doubts whether some of them have been correctly read. Even where it is not possible to arrive at any definite reading, it is better that the uncertainty of reading should be clearly known to scholars than that definite theories should be based on it. With this object in view I propose to discuss a few of the dates in the hope that other scholars might be induced to re-examine them for themselves, instead of relying on older views, formed, in many cases, at a time when the value of numerical signs was not so well known.

I. NĀLANDĀ C.P. OF DEVAPĀLA—YEAR 39 (*Ep. Ind.*, XVII, p. 320 and Pl.).

The date was formerly read as 38¹ and is now accepted as 39. The second figure, however, looks more like 5 than 9, as will be evident from a comparison with the figure for 5 in 54 of the Ins. of Nārāyaṇapāla on the back of the Pārvatī Image². The figure in the Nālandā C.P. is different from 5 in the Hilsa Tara Image³ Ins., the slanting line at the top as well as the curve at the bottom being both more prolonged. But, as noted above, it resembles 5 in Nārāyaṇapāla's Ins., dated 54⁴, in both these respects, while it is altogether different from the figure 9 used in the Kurkihar Inss. of the year 9 of Devapāla and year 19

¹ H. Kuraishi.—*List of Ancient Monuments in Bihar and Orissa* (1931), p. 74.

² R. D. Banerji.—*Mediaeval Sculpture*, Pl. III(b).

³ *JBORS.*, X, 33.—The date is read as 35 but is really 25. This has already been pointed out in *JRASBL.*, IV, 390.

⁴ It may be noted that in the Indian Museum Image Ins. of Nārāyaṇapāla (*Pālas of Bengal*, Pl. XXXI) the figure 5 resembles that of Hilsa. Thus the two forms of 5 occur in the Inss. of both Devapāla and Nārāyaṇapāla.

of Vighrahapāla¹, and the Indian Museum Ins. of Nārāyaṇapāla². The date of the Ins. should, therefore, be read as 35.

II. JAYANAGAR IMAGE INS. OF MADANAPĀLA—YEAR 19.

(Cunningham's *Archaeological Survey Reports*, Vol. III,
Pl. XLV, No. 17.)

The second figure was read as 9 by Cunningham and this has been accepted by all³. It is almost certainly 4 as may be easily verified by a comparison with the figure 4 in the Pārvaṭī Image Ins. of Nārāyaṇapāla—year 54, referred to above, the Chandimau Ins. of the 42nd year of Rāmapāla⁴, and the Kamauli Plates of Vaidyadeva⁵.

It may be noted that the figure read as 9 differs from that in Nālandā C.P. and the figure for 9 used in Kurkihar Ins. and the Ins. of Nārāyaṇapāla referred to above. The date of the Ins. should therefore be read as 14.

III. RAJIBPUR SADĀŚIVA IMAGE INS. OF GOPĀLA III—YEAR 14.

(*Ann. Rep. A.S.I.*, 1936-7, p. 131, Pl. XXXV(C).)

The figure read as 4 is absolutely unlike the figure used for 4 in the Ins. of Nārāyaṇapāla or Rāmapāla referred to above. I do not know of any symbol like it being used for 4 in the Pāla records. As a matter of fact the letter does not resemble any known symbol for a numerical figure. Doubt, therefore, naturally arises whether it is any numerical figure at all. Late Mr. N. G. Majumdar, who edited this Ins., has sought to demolish all current theories about Gopāla's short reign on the basis of this record. It is, therefore, necessary to be sure about the reading of the date.

The letter in question consists of a vertical line with a short angular hook attached to the top at the right. It is unlike any letter or numerical figure known to me. It may be part of a letter of which the other part has not been engraved through mistake, or a *virāma* sign. As the few letters in the next line are effaced it is difficult to make any definite suggestion. But it should not be read as 4 unless similar figure with value of 4 is discovered. For all we know the date of the Ins. may be year 1.

¹ I have consulted the facsimile of Kurkihar Image Inss. kindly supplied by Mr. A. Ghosh.

² *Pālas of Bengal*, pp. 61-62, Pl. XXXI.

³ Dr. Bhandarkar evidently felt some doubts about the correct reading of the date, as he put a query after it in his *List of Inscriptions* (No. 1640).

⁴ *Pālas of Bengal*, Pl. XXX (pp. 93-4).

⁵ *Ep. Ind.*, Vol. II, p. 347, Pl. III-A.

BARRACKPUR C.P. OF VIJAYASENA—YEAR 62.

(Ep. Ind., XV, 282, Pl.)

Late Mr. R. D. Banerji read the date first as *Sam* 37¹, then as *Sam* 31², and finally as 32³. Mr. D. C. Bhattacharya challenged the accuracy of the reading and suggested 61. He, however, observed that 'had the two figures after *Sam* been joined together, they would almost exactly resemble the figure 5 of the Belabo Ins. of Bhojavarmān'. But as Mr. Banerji who examined the original plates twice, did not suspect a single figure, Mr. Bhattacharya concluded that the two figures must be separate. He then argued: 'The first figure being in the form of a single curve without any angle does not at all tally with any of the known figures representing 3 most of which show two distinct arcs forming an angle, besides the lower curve...the first figure quite regularly corresponds to the known figures of 6, only it has a slight bend at the top towards the left, almost exactly like the figure 6 inscribed in a metal image of Vajratārā and in a MS. Colophon'. The second figure, in his opinion, also corresponds better with the figure 1 of the Sarnath Ins. of Mahipāla than any of the known figures of 2⁴.

Unfortunately, the original plate being no longer available, we have to rely on the plate published along with Mr. Banerji's article in *Ep. Ind.* As Mr. Banerji himself observes, 'these were prepared from two enlargements from two indifferent negatives' (p. 278). They cannot, therefore, be very much relied upon. Besides, it would be obvious to anybody who examines the published plate that the tops of the two numerical figures are on a lower level than the rest of the line, clearly indicating that the upper portion of them has been effaced. It is thus quite likely, as Mr. Bhattacharya has suggested, that the two figures were joined and we have to read the date as 5. I quite appreciate Mr. Bhattacharya's objection that Mr. R. D. Banerji who examined the original plate did not detect it. But following the same line of argument one might say that Mr. Banerji would not have unhesitatingly read the first figure *always* as 3 if he did not find on the plate itself the upper part of the curve, or at least clear traces of it to justify his reading 3. As a matter of fact, what Mr. Bhattacharya describes as a slight bend at the top, appears to me to be a distinct trace of the curve. If the figure, even as it is, is compared with the figure for 6 in the Naihati C.P. of Vallālasena, it can hardly be read as 6. It is possible to read the figure as 2 or 3. As Mr. R. D. Banerji had the advantage of examining the original plate which others had

¹ *Pālas*, p. 105.

² *Bāṅglār Itihās*, p. 292.

³ *Ep. Ind.*, Vol. XV, p. 284.

⁴ *Ind. Ant.*, 1922, p. 157.

not, it is safer to accept his reading until the plate may be examined afresh.

TWO IMADPUR IMAGE INSS. OF MAHIPĀLA—YEAR 48.

These two identical Inss. supply a regnal year for Mahipāla which is 17 or probably 27 years later than any date otherwise known¹. Hence this date has been an important factor in fixing the Pāla chronology. Unfortunately, we have to depend entirely on a footnote to an article by Dr. Hoernle so far as the reading of the date is concerned². No facsimile of the Inss. was ever published, and no one else appears ever to have examined it. The 't' of *Samvat* has been often read by Cunningham and others as numerical figure, and, as already noted above, the mistakes in reading dates have not been infrequent. In view of this it is extremely doubtful how far reliance may be placed on the very cursory reading of the date added in a footnote by Dr. Hoernle, unchecked by anybody else.

The images containing the Inss. were, according to Hoernle, found by Mr. Lincke at Imadpur, but in the latter's account³ of the ruins of that place he mentions images with Inss. which are altogether different. It is possible, however, that those were other images. But in that case the two images, noted by Hoernle, are not mentioned by Mr. Lincke in his account. In view of the importance of the Inss. an earnest effort should be made to trace these images.

¹ The date of a Kurkihār Image Ins. of Mahipāla has been read as 31 (*JBORS.*, XXVI, 245). The first figure, however, looks more like 2 than 3.

² *Ind. Ant.*, XIV, p. 165, f.n. 17.

³ *Proc. A.S.B.*, 1881, p. 98.



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Tibetan and Bhotia Blood Group Distributions.

By EILEEN W. E. MACFARLANE.¹

In 1937 a small sample (56) of Tibetan bloods was grouped at Kalimpong on the southern end of the Tibetan trade route in North Bengal (Macfarlane, 1937). In November 1941 a visit was made to Darjeeling in the foot-hills of the Himalaya Mountains a few miles west of Kalimpong and over a hundred more of these people from various parts were grouped. Bloods from sixty-five were also typed for M and N. They are generally very independent and superstitious and it is difficult to persuade them to give a little blood. Thanks to the co-operation of some local school authorities and missionaries, I was able to get both children and adults. It was not without a struggle that 117 blood samples were obtained. From these five sibs must be subtracted leaving 112 only.

The term Bhotia (or Bhutia) is a general one for Tibetans and certain hill people of Bhutan, Nepal and Sikkim States who possess some Tibetan intermixture. In the 1931 Census (Porter, 1933) 29,404 Bhotias were recorded from the Darjeeling District of Bengal. They were separated into the following four divisions: (a) *Bhotia of Bhutan* (Drukpa, Dukpa), (b) *Bhotia of Nepal* (Sharpa, Kahm, Nag Chhong, Salakha, Shakzang), (c) *Bhotia of Sikkim* (Dejong-Lhari, Dengongpa, Lhopa Bhotia), (d) *Bhotia of Tibet*. They are of course Mongoloids and the strain has been characterized by Guha (1937) as follows: 'medium to tall stature, round broad head and face, with high cheek bones and long flat nose. There is very little hair on the face and body and the skin colour is light brown tinged with a reddish tint'.

In Darjeeling the Tibetans tested were mostly poor people—mule drivers, coolies and beggars. In Nepal, Bhutan and Sikkim the Bhotias are a mixture of Tibetan and aboriginal strains, such as the Lepchas. Neither sex has any scruples against racial admixture, therefore the data from the Bhotias born in Tibet have been separated from those born in Sikkim and the Darjeeling District. The Tibetans were chiefly from Central Tibet (Shigatse and Lhasa) or Eastern Tibet (Chumbi, Kham and Yatung). Some of them may be mixed with the Chinese (Macfarlane, 1937). Including the 1937 data (from which three sibs have been subtracted leaving 53) there are altogether 80 Tibetan Bhotias (41 tested in 1937) and 85 from Sikkim and Darjeeling District

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(12 tested in 1937). These data are given in Table I together with the blood group distribution found among the 112 mixed Bhotias in 1940 and in a total of 165 mixed Bhotias made up of the latter plus the 53 grouped in 1937.

The Tibetan Bhotias show over 9% more of Group A than the mixed Bhotias and over 10% less of Group AB. Although the two samples are small these differences indicate that in the region of Sikkim the Tibetans, rich in agglutininogen A, are mixing with people who have more of Group B. I still have data from only 33 Lepchas (8 more than in 1937) and the numbers found within the different blood groups are: Group O 10, Group A 12, Group B 9, Group AB 2. Only one sample of less than a hundred mixed Nepalīs has been published (Macfarlane, 1937).

It has been pointed out by Boyd (1939) that according to Bernstein's theory of the inheritance of the blood groups, which is now thoroughly established, the sum of the frequencies of the three genes ($p+q+r=1$, except for chance deviation; when the difference actually found (D) is divided by its standard deviation (σ) the result should not exceed 2, where the variations are due to chance. In this way Boyd has tested all available anthropological blood group data. When D/σ is more than 2 the data are 'unsatisfactory, due to inhomogeneity of the population, or errors in technic, or both'. (Boyd.)

The values of D/σ for the different samples in Table I are interesting. For Tibetan Bhotias, the value is only 0.5, while for the Bhotias born in Sikkim and Darjeeling it is 3.06. Errors in technique may be ruled out since the two sets of data were collected together and sorted out later. Therefore this high value for D/σ may be attributed to the recent racial interbreeding that is occurring among the Bhotias south of Tibet. If these two groups had not been examined separately no indication of the race mixture would have been gained from the mixed samples because the intermediate value of D/σ which is obtained is not larger than what might be due to chance.

In a sample of 187 Tibetan bloods grouped at Lhasa by Tennant and reported by Gates (1935) the extraordinarily high percentage of 24.1 of Group AB was found ($D/\sigma=4.21$). In Boyd's list (1939) among 49 samples from all parts of the world showing over 15% Group AB 40 have a value for D/σ of over 2.0. In cases where the technique used can be relied upon percentages of Group AB of this order also seem to indicate a racially mixed sample or genetic inequilibrium in the population.

The Bhotias from Sikkim and Darjeeling grouped in 1940 were mostly boarders and day pupils in the local colleges and schools.

In Table II blood group distribution in all Bhotias tested is compared with that found in the Khasis at Cherrapunji, Assam, in 1939 (Macfarlane, 1941) and in Chinese in Hu-Nan, central China (Li-Chi-Pan, see Boyd).

The Khasis are a matriarchal tribe of mongoloid aborigines of the Khasi Hills, Assam, and are known to be somewhat mixed genetically. Their traditions say that they came from the north and their blood group distributions are of the same order as those among the Bhotias. The Lushai and Angami Naga of the mountains of east Assam also show high percentages of Groups O and A but less of Groups B and AB than the Khasis (Mitra).

Most of the blood group data from the Chinese populations (Boyd) are from eastern areas and show more of Group B than found in the Bhotias or Khasis, but in the large sample from Hu-Nan the distribution is of the same order. This indicates that the blood group distribution among mongoloid peoples in a large area from western China through Tibet to the Himalayan States and central Assam is much the same, although the final proportions may have been brought about by different racial ingredients.

Blood Types.—A limited amount of anti-M and anti-N fluids were available and 65 bloods from Bhutias born in Sikkim and Darjeeling District were typed (see Table III). Even though the sample is small the results resemble closely those of the distribution of blood types among a population of mixed Indians (mostly Bengalis) at Calcutta (Greval *et al.*) Type N seems to be scarce (under 10%) among the Bhotias as it is among the mongoloid American Indians. Chinese at Hong Kong were found to have 18.2% of Type N (Ride in Boyd). These and the Japanese have a blood type distribution resembling that found in western Europe.

Summary.—1. One hundred and twelve mixed Bhotias were grouped at Darjeeling, North Bengal. They showed less of Group B than of Group A and over 10% of Group AB.

2. When those born in Tibet were separated from those born in Sikkim or Bengal the former were found to be genetically in equilibrium serologically and the latter showed signs of racial mixture.

3. The Bhotias of Sikkim are known to have interbred with the Lepchas. They show three times as much of Group AB as the Tibetans, and this increase is at the expense of Group A.

4. The blood group distribution in mixed Bhotias is of the same order as that found in the Khasis of Assam.

5. A small sample of bloods was typed and indicates that Type N is scarce among the Bhotias and that the types are distributed as among the Bengalis.

Table I. *The Distribution of the Blood Groups among Bhotias.*

Description of Sample.	No.	Nos. and Percentages in Groups.				Frequencies.			
		O	A	B	AB	<i>p</i>	<i>q</i>	<i>r</i>	D/ σ
Mixed Bhotias, 1940	112	38 33.92	36 32.14	25 22.32	13 11.61	.230	.168	.582	1.25
All Bhotias, 1937 & '40	165	61 36.97	53 32.12	34 20.61	17 10.30	.223	.151	.608	1.5
Born in Tibet	80	31 38.75	29 36.25	16 20.0	4 5.0	.243	.144	.622	0.5
Born in Sikkim and Darjeeling District	85	31 36.47	23 27.07	18 21.17	13 15.29	.193	.154	.604	3.06

Table II. *Blood Groups in Bhotias, Khasis and inland Chinese.*

People.	No.	Percentages in Groups.				Frequencies.			
		O	A	B	AB	<i>p</i>	<i>q</i>	<i>r</i>	D/ σ
Bhotias (mixed)	165	36.976	32.121	20.606	10.303	.223	.151	.608	1.5
Khasis (Macfarlane)	200	33.0	35.0	18.5	13.5	.261	.168	.563	1.7
Chinese of Hu-Nan (Li-Chi-Pan)	1296	31.9	39.0	19.4	9.8	.277	.150	.565	1.4

Table III. *Blood types M and N in Bhotias (mixed).*

People.	No.	Nos. and Percentages in types.			Frequencies.		
		M	MN	N	<i>m</i>	<i>n</i>	D/ σ
Mixed Bhotias	65	28 43.1	32 49.2	5 7.7	.667	.298	5.61

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BIBLIOGRAPHY.

- BOYD, W. C., (1939). Blood Groups. *Tabulae Biologicae*, 17: 113-240.
- GATES, R. R., (1936). Tibetan Blood Groups. *Man*, 36: 147.
- GREVAL, S. D. S., CHANDRA, S. N. and WOODHEAD, L. S. F., (1939). On M and N in blood groups; the technique of typing, the antifuoids, findings in 300 Indians, and associated considerations. *Indian Jour. Med. Res.*, 26: 1041-1054.
- GUHA, B. S., (1937). An outline of the racial ethnology of India; in Hora, S. L. An outline of the field sciences of India, p. 125-139. Calcutta.
- MACFARLANE, E. W. E., (1937). Eastern Himalayan blood-groups. *Man*, 37: 159.
- , (1941). Progress in blood grouping in India, 1938-39. *Ibid.*, (in Press).
- MITRA, P. N., (1936). Blood groups of the Angami Nagā and the Lushai Tribes. *Indian Jour. Med. Res.*, 23: 685.
- PORTER, A. E., (1933). Bhotia. Census of India, 1931, vol. 5: 458.

Observations on the method of Carp Culture in the so-called Salt Lakes near Calcutta, with a note on the Fish Fauna of the Lakes.

By PURNENDU SEN.

(Communicated by Dr. S. L. Hora.)

I. INTRODUCTION AND GENERAL CONSIDERATIONS.

The Salt Lakes to the east of Calcutta have long been known for the abundance of their fish fauna, which up to a few years ago consisted mainly of brackish water forms such as *Lates calcarifer* (Bloch) and *Mugil parsia* Ham. (Gupta, 1908). *Hilsa ilisa* (Ham.) was also not uncommon when the lakes were fed by water from the tidal river Bidyadhari which of late has silted up; there is at present no ingress of saline water into the Salt Lakes from this source. Sewell (1934) in studying the fauna of the Salt Lakes also remarked on the rapid deterioration of the river Bidyadhari owing to deposition of silt during the flood tides. The natural process of delta-formation and the consequent changes in the river system, as also engineering constructions, such as bridges and canals, have also been instrumental in bringing the present moribund condition of the river (Sewell, 1934).

As a result of this deterioration and through repeated dilutions with rain water during the last few years the chlorine content of the lakes has decreased considerably (Table I), as

TABLE I.
Salinity in the Salt Lakes.

Year.	Chlorine contents per 100,000 parts.
1928	1,499 ¹
1936	950
1939	640
1940	130

N.B.—Readings were taken during the dry seasons from a northern point in the Salt Lakes (North).

¹ This figure obtained by Dr. K. P. Biswas is quoted by Sewell (1934), p. 59 and Neogi, S. K. (1936), *Rec. Mal. Survey of India*, VI, p. 43.

already pointed out by Sewell (1934) who came to a definite conclusion that the water in the lakes was gradually becoming more and more fresh. The vast water area of the lakes is consequently more and more utilized for the culture of freshwater species especially the carps. Several fish culture ponds have been started in the villages bordering on the Salt Lakes, and the lakes themselves are being more and more banded up into small reservoirs or 'bheris' as time passes (*vide* Gupta, 1908).

II. FISH FAUNA OF THE SALT LAKES.

In directing routine surveys of Anophelines in the area, I kept field notes of the fish which were found in the Salt Lakes and in the several fish culture ponds. The various species of fish and common crustacea found in the Salt Lakes during the years 1937 to 1940 are listed in Table II.

TABLE II.

List of fishes and crustacea available in the Salt Lakes.

Scientific Names.	Local Names.
Pisces	
Family Megalopidae	
1. <i>Megalops cyprinoides</i> (Broussonet).	Amlet.
Family Clupeidae	
2. <i>Engraulis telera</i> (Ham.).	Fesha—Phansa*.
Family Notopteridae	
3. <i>Notopterus notopterus</i> (Pallas).	Folui—(Phola)—Pholui*.
Family Cyprinidae	
Subfamily Abramidinae	
4. <i>Chela bacaila</i> Ham.	Chela—Chela*.
Subfamily Rasborinae	
5. <i>Esomus danricus</i> (Ham.).	Danrke—(Danrica)—Danrika*.
Subfamily Cyprininae	
6. <i>Amblypharyngodon mola</i> (Ham.).	Maurala—Mawrala*.
7. <i>Barbus (Puntius) sarana</i> (Ham.).	Swarna punti—(Sarana)—Sarana punti*.
8. <i>Barbus (Puntius) sophore</i> Ham.	Safari punti—Punti*.
9. <i>Barbus (Puntius) ticto</i> Ham.	Tit punti—Tita punti*.
10. <i>Catla catla</i> (Ham.).	Katla—(Catla)—Katla*.
11. <i>Cirrhina mrigala</i> (Ham.).	Mrigal—(Mrigala)—Mrigala*.
12. <i>Cirrhina reba</i> (Ham.).	Kharke bata—(Batta)—Kharke- batta*.
13. <i>Labeo bata</i> (Ham.).	Bata—(Dommarci bata)—Bhang- na*.
14. <i>Labeo calbasu</i> (Ham.).	Kalbose—(Kalbasu)—Kalbasu*.
15. <i>Labeo gonius</i> (Ham.).	Kurchi bata—(Karchi)—Karchi*.

N.B.—The local names in brackets and those marked with asterisks are according to Day (1876-78) and Shaw and Shebbeare (1937) respectively.

TABLE II (continued).

Scientific Names.	Local Names.
16. <i>Labeo rohita</i> (Ham.).	Rui--(Ruee)—Rui*.
Family Clariidae	
17. <i>Clarias batrachus</i> (Linn.).	Magur—(Mahgur)—Magur*.
Family Heteropneustidae	
18. <i>Heteropneustes fossilis</i> (Bloch).	Singi--(Singee)—Singhi*.
Family Siluridae	
19. <i>Wallagonia attu</i> (Bloch).	Boal—(Boyari)—Boal*.
Family Bagridae	
20. <i>Mystus tengara</i> (Ham.).	Tangra.
Family Cyprinodontidae	
21. <i>Aplocheilichthys panchax</i> (Ham.).	Techoke—(Panchax).
22. <i>Oryzias melanostrigatus</i> (McClelland).	Chuno.
Family Hemirhamphidae	
23. <i>Hemirhamphus limbatus</i> C.V.	Bogu.
Family Ambassidae	
24. <i>Ambassis nama</i> (Ham.).	Katchanda—Nama chanda*.
25. <i>Ambassis ranga</i> (Ham.).	Ranga chanda—(Chandee)—Ranga chanda*.
Family Ophicephalidae	
26. <i>Ophicephalus gachua</i> Ham.	Chang—Cheng*.
27. <i>Ophicephalus punctatus</i> Bloch.	Lata—Taki*.
28. <i>Ophicephalus striatus</i> Bloch.	Sole—(Sol)—Shol*.
Family Osphronemidae	
29. <i>Colisa fasciata</i> (Bl. Schn.).	Khalisa—Khalisha*.
Family Anabantidae	
30. <i>Anabas testudineus</i> (Bloch).	Koi—(Coi)—Koi*.
Family Nandidae	
31. <i>Nandus nandus</i> (Ham.).	Nadas—(Latha)—Nandus*.
Family Gobiidae	
32. <i>Glossogobius giuris</i> (Ham.).	Bele—Beley*.
Family Mugilidae	
33. <i>Mugil corsula</i> Ham.	Khorsola—(Corsula).
34. <i>Mugil parsia</i> Ham.	Parse—(Tarui).
35. <i>Mugil tade</i> Forsk.	Bhangan (Bangon).
Family Scatophagidae	
36. <i>Scatophagus argus</i> (Bloch).	Pyra chanda.
Family Mastacembelidae	
37. <i>Mastacembelus pancalus</i> (Ham.).	Pankal—(Pangkal).
Crustacea	
Family Palaemonidae	
1. <i>Palaemon lamarrei</i> M.-Edw.	Kucho chingri.
2. <i>Palaemon carcinus</i> (Fabr.).	Mocha or Golda chingri.
Family Penaeidae	
3. <i>Penaeus carinatus</i> Dana.	Bagda chingri.
4. <i>Metapenaeus monoceros</i> (Fabr.).	Honye chingri.
Family Portunidae	
5. <i>Scylla serrata</i> (Forsk.).	Nona kankra.
Family Grapsidae	
6. <i>Varuna litterata</i> (Fabr.).	Chiti kankra.

N.B.—The local names in brackets and those marked with asterisks are according to Day (1876-78) and Shaw and Shebbeare (1937) respectively.

Lates calcarifer (Bloch) or the 'bhetki' has become extremely rare in the area. It has been replaced by the carps; these do not breed in confined water but are introduced into the Salt Lakes area almost every year from distant nurseries. Fish like *Mystus tengara* and the mugils are also introduced in the shallow fish ponds of the area at fry or young stages from the navigation canals (Pl. 1, Fig. 1) bordering on the Salt Lakes and the 'bheris'.

The Culture of Carps in the Salt Lakes area.

Usually towards the end of March, the ponds designed for carp culture are completely dried by draining the water into the adjacent lakes (Pl. 1, Fig. 2), while several of the shallow ponds dry up naturally during March. The ponds are then cleaned of debris and vegetation and the edges are trimmed. The mud exposed to the sun soon gets completely dried and is then broken up into dust. After these preliminary measures the ponds are filled up with water from the adjoining 'bheris' towards the end of May or in June through small cuts, sometimes water is also introduced either with the help of a 'donga' (Pl. 1, Figs. 3 and 4) which is a dug-out trunk of a palm tree or with a 'seoni' (Pl. 1, Fig. 5), an improvised basket made of palmyra leaves or of tin sheets. The rains also start at this time. The tiny fry of carps are then introduced into these ponds, the number introduced depending on the size of the pond.

The introduction of fry in the Salt Lakes area (Pl. 1, Fig. 6) begins towards the end of May or in June and continues uptil July, while fingerlings are introduced during September and even in October. Heavy showers of rain within two days of the introduction of the tiny fry in the ponds, are believed to be detrimental to the life of the fish.

The rate of growth of carps is not uniform in all ponds. The young of the larger forms such as *Labeo rohita*, *Cirrhina mrigala*, *Catla catla*, etc., normally grows to $\frac{1}{4}$ seer in one year although instances of carps growing to $\frac{3}{4}$ of a seer in one year are not rare. 'Bhetki' also, according to Gupta (1908), grow to $\frac{1}{4}$ seer in the Salt Lake 'bheris' in course of a year, that is to say, in the second year of introduction. The latter author further mentions that in Bavaria, the carps can attain a weight of 1 to 2 lb. in the second year. Both in America and Europe, carps are nurtured under adequate supervision and feeding is done scientifically, as against the empirical methods followed in this country.

The carps when sufficiently grown are disturbed by beating the water with bamboo poles, etc., as movements of fish in the ponds resulting from this disturbance are believed to result in rapid increase in size; growth to a size one seer or more in the course of two years has been noted as a result of such

treatment. During February and March one often notices fish being thus agitated in the Salt Lakes.

Food supply.—Food in the form of rotten water hyacinth, sullage water and algae is supplied to the fry. The hyacinth is first allowed to rot and then introduced in the ponds. The dried mud from bed of sullage canals is also used as food of the fish fry, as also the algao and other micro-organisms growing around grasses on edges of ponds. Some people in the absence of sullage water prefer the introduction of *Lemna* which is eagerly eaten by the fry (*vide* Chatterji, 1934). The food of carps as already pointed out by Gupta (1908) constitutes mostly of vegetable matter while the animal food consumed is composed of insect larvae, small crustacea and mollusca and other similar organisms (Mookerjee, 1938). Given the suitable food the minute fry will grow to a size of one to three inches within three months of introduction. Gupta (1908) noted carps growing to 16 or 17 cm. in length in the first year.

Great discrimination has to be exercised in supplying the food matter to the growing fish and if the food is not of the proper type the fry die. The favourite food of the minute fry consists of micro-plankton, such as Infusoria (*Paramoecium*, according to Chatterji, 1934), diatoms and minute unicellular algae, for the bigger fry or the fingerlings, minute crustaceans such as *Daphnia* and *Cyclops* in addition to algae, and for the fairly adult stage, earthworms, chironomid larva and higher crustaceans such as shrimps, in addition to microscopic forms like *Daphnia*, *Cyclops* and algae (*vide* Innes, 1932).

Mortality among the fry and fingerlings may be very high owing to congestion and lack of proper food. The distribution of young stages of carps from a rearing pond where congestion is noticeable to several ponds is useful as it ensures a better development of the fry. Another good practice often noticed in the areas in which fish are cultured is frequent dragging by nets. This helps in the removal of the slimy matter often of algal origin, and external parasites from the body of the fish. De (1910) mentions the practice of planting bamboo sticks and posts in the middle of the tanks to enable fish to rub off their external parasites. The agitation set up in the water column by the dragging of nets also helps in the partial removal of the gaseous formations from the substratum of the ponds. The mortality of fish is very heavy in foul water which is not properly aerated and bears an excessive amount of carbonic acid gas, or when the temperature of the water is high (Gupta, 1908; Sewell, 1926; Pruthi, 1932; Sen, 1939). The dragging of nets further ensures brisk movement which is highly beneficial for the healthy growth of the fish.

Some people allow soap water in their ponds which are found unfavourable for the growth of fish probably to increase the alkalinity of the water; this especially in acidic waters is

reported to have yielded good results. A similar practice of soaking plantain fellings, rich in alkali, in waters fouled by the stifling of jute, is followed in parts of East Bengal (Gupta, 1908).

Natural enemies of the fry.—The so-called eggs which are nothing but the tiny fry of the carps are preyed upon by the frogs *Rana tigrina*. Fish of the genera *Barbus* and *Ambassis* are also harmful to the fry of the carps, the former feeds voraciously on the food matter available in the ponds, while the latter may inflict injury to the fry by their sharp spines. Sometimes fry of certain carnivorous fish like *Wallagonia* are accidentally introduced into the ponds along with the fry of carps. This should be guarded against, otherwise there will be a great fall in the yield of carps. Thick growths of *Hydrilla* and *Ceratophyllum* hamper the normal development of the fish fry. Very little of such aquatic vegetation should be permitted to grow in the ponds where carps are being reared, and predator fish like *Ophicephalus*, *Notopterus* and *Wallagonia* should be removed as soon as they are detected in the ponds in order that the commercial species of carps can thrive (Chatterji, 1934; Hora and Mukerji, 1938).

In conclusion, I am grateful to Mr. K. N. Das of the Zoological Survey of India for his assistance in the identification of the fish recorded in this paper and in various other ways. Further, I am greatly indebted to Drs. B. Prashad and S. L. Hora for the many valuable suggestions I have received from them.

REFERENCES.

- CHATTERJI, G. C. (1934)—Biological control of malaria in rural areas of lower Bengal. *Central Co-operative Anti-malaria Society, Calcutta*, pp. 15 and 16.
- DAY, F. (1876-78)—Fishes of India (London).
- DE, K. C. (1910)—Report on the fisheries of eastern Bengal and Assam. *Eastern Bengal and Assam Secretariat, Shillong*, p. 33.
- GUPTA, K. G. (1908)—Results of enquiry into the fisheries of Bengal and into fishery matters. *Bengal Secretariat Book Depot, Calcutta*, pp. 65-109.
- HORA, S. L. and MUKERJI, D. D. (1938)—Table for the Identification of Indian Freshwater Fishes, with descriptions of certain families and observations on the relative utility of the probable Larvivorous Fishes of India. *Health Bulletin No. 12*, pp. 37-42.
- INNES, W. T. (1932)—Goldfish Varieties and Tropical aquarium fishes. Innes & Sons, Philadelphia, pp. 72 & 73.
- MOOKERJEE, H. K. (1938)—Report of the scheme for the investigation of the life-history, bionomics of freshwater fishes of Bengal. *Simla*, pp. 1-33.
- PRUTHI, H. S. (1932)—Investigations regarding a recent epidemic of fish mortality in the tank in the Indian Museum compound with remarks on the causation of such epidemics in general. *Intern. Revue d. Ges. Hydrobiol. U. Hydrol.*, XXVI, pp. 242-257.
- SEN, P. (1939).—Can Paris Green kill Fish? *Bengal Publ. Health Journ.*, I, pp. 9-12.

- SEWELL, R. B. S. (1926)—Investigations regarding an epidemic of fish mortality in the tanks in the Indian Museum compound. *Journ. Asiat. Soc. Bengal*, XXII, pp. 177-201.
- IDEM. (1934)—A study of the Fauna of the Salt Lakes, Calcutta. *Rec. Ind. Mus.*, XXXVI, pp. 45-49, 58-60.
- SHAW, G. E. and SHEBBEARE, E. O. (1937)—The Fishes of Northern Bengal. *Journ. Roy. Asiat. Soc. Bengal, Sciences*, Vol. III, pp. 1-137.
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FIG. 1. Kristopur canal showing a cut to connect with the Salt Lake 'bheris'.



FIG. 2. A fish pond dried by drawing the water into the Salt Lakes.

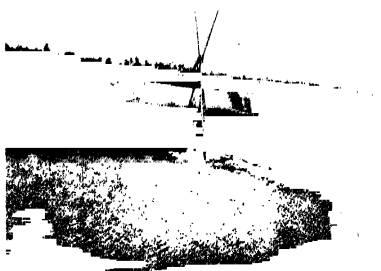


FIG. 3. 'Donga' utilized in introducing water into a pond for fishery.



FIG. 4. A closer view of a 'donga'.

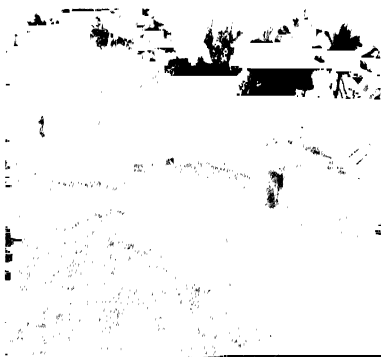


FIG. 5. 'Seoni' used in bailing out water.



FIG. 6. A view of Salt Lake 'bheris'.

**Blood Groups among Balahis (weavers), Bhils, Korkus,
and Mundas, with a note on Pardhis, and Aboriginal
Blood Types.**

By EILEEN W. E. MACFARLANE.¹

A visit was made early in 1941 to the Nimar District in the Western Central Provinces, India, primarily to get more blood groups from the aboriginal Bhils. While biding my time to go to the Bhil villages, I was able to get a good sample of bloods from the Balahis at Khandwa and later some aboriginal Korkus and a few nomadic Pardhis were also grouped.

The methods used were the same as on previous trips and have been described (Macfarlane, 1940).

The *Balahis* are a lower caste of Hindu weavers, labourers, and servants of the Hoshangabad and Nimar Districts. The number of Balahis in the Central Provinces and Berar returned in the 1931 census was 56,782, and over half a million in India, chiefly in Rajputana and Central India. Although they are an 'impure' caste who cause pollution to caste Hindus, they rank above the lowest occupational castes of untouchables such as the Chamārs (leather workers) and Mehtars (scavengers) in the Hindu social scale.²

Their position is on a par with those of the large Mahār and Mang castes who are widespread in Western and Central India. According to their traditions they came to the Nimar from the north-east, and they are considered to be a branch of the Kori caste of weavers in the United Provinces (Russell). Russell (1916) mentions that in the Hoshangabad District they are known alternately as Mahārs and that the latter caste is also sometimes called Dher. In the Nimar the Balahis rank above Mahārs, and have no social dealings with them. Russell also records that some of the Balahi sub-castes and endogamous groups are called by the names of castes: Katia, Kori, Mahār, and Gannore, and that the latter is a Rajput clan of left-handed descent.

Physically the Balahis show a considerable amount of variation especially in colouration and nasal form. Their noses often have a convex bridge, as in Guha's Alpo-Dinaric type (Guha, 1937) and an occasional person with hazel or grey eyes

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² Lower than Balahis:—Chamārs, Mehtars, Basors, Mangs, Dhobis, Fermals (Father S. Fuchs private communication, June 1941).

occurs (figures 1 and 2). They take people into their caste from higher castes, such as an occasional outcaste upon his request, and adopt women who elope with a Balahi. According to Russell (1916) they admit Korkus and Gonds and any but the very lowest Hindu occupational castes. Father Fuchs, who has lived amongst them for some years, told me that in recent years only infrequently is an occasional individual thus taken in, usually a man who has become friendly with the Balahis through living with them, and no group as such has been received. Their culture shows some relics of a pre-Hindu religion now overlaid by the degenerate form of Hinduism which they profess (Fuchs, 1940). The Balahi sub-castes of the Nimar eat the flesh of cattle that have died. They claim to be the oldest inhabitants of the District (Russell) and this is confirmed by higher caste Hindus who know by tradition that their forefathers bought their fields from Balahis (Father Fuchs private communication, 1941).

After subtracting data belonging to members of the same immediate family, the blood group distribution was obtained from two hundred Balahis as shown in Table I.

The Balahi data are unusual for India, where there is characteristically a preponderance of Group B over Group A, especially in the lower castes, except in the south-west (Macfarlane, 1938). In the Balahis there is an equal distribution of the three main blood groups, a condition that has hitherto been found in this country only among the Mundas, and the related Maria Gonds far to the East, in the Mahrattas, Rajputs, Jats, and Pathans.¹ Because Balahis do not resemble the Mundari-speaking tribes in general appearance and have not been linked with them by scholars, we may neglect the Mundas at present. Until more blood group data are available from Rajputana, the United Provinces and Bombay we cannot speculate on the resemblance in blood group distribution between the Balahis and the castes listed above from those regions. The Balahis have been in contact since the middle ages with the Rajputs who twice migrated over this part of India during the Moghul wars of the fourteenth century and earlier (Russell).

The contrast between their blood group distribution and that found in the Depressed Classes of the Deccan (Macfarlane, 1940) is surprising. In a small sample (75) of the latter people were found 18.7% Group A and 44% Group B and a similar condition exists among the lower castes of South Bengal (Macfarlane, 1938). Majumdar (1940) in 92 Chamars in the United Provinces found 13.3% Group A and 38.3% Group B. Some of the higher castes in the United Provinces also seem to have a marked preponderance of Group B over A (Majumdar). In

¹ For comparison of all samples see Boyd's Tables (1939) for original references, see also Macfarlane (1938).

Table II certain Indian races and tribes are listed with relation to the serological value of (A-B). The Balahi data seem to indicate that the ancestors of this caste originated chiefly from the north-west of their present habitat, since Indian groups possessing frequencies for both the genes A and B lying between 0.210 and 0.259 are the Balahis, Jats, Mundas, Rajputs, and Pathans only. The value 1.2 for D/σ (Table I) is not high enough to suggest genetic instability (Boyd). It would appear that any accessions to the Balahi caste in the past few generations have been genetically negligible. Serologically they are distinct from the depressed Mahārs and Dhers.

The *Bhils* of the Nimar are cultivators and tenant farmers inhabiting small scattered villages among the fields. They are descended from a war-like tribe of aboriginal hunters of the Vindhya, Satpura, and Ajanta Hills who caused a lot of trouble as freebooters during and after Moghul times. In the 1931 census 363,124 Bhils were returned from Central India and 30,325 from the C.P. and Berar. Their original Bhili speech was classified by Grierson (1906) as a Mundari language, but they have now given up their own dialect for Hindi. Centuries ago when the Rajputs came into the Bhil country the two peoples were closely associated for some generations, the Rajputs sometimes taking Bhil women for mates. This led to Hinduization and the disintegration of the tribe into separate endogamous groups based on the presence or lack of Rajput ancestors (Venkatachar). The Bhilallas are also descended from offspring of Rajput men and Bhil women (Russell).

Hinduized Bhils admit outsiders into the tribe from any communities except those of lower castes than themselves among which are Balahis and Nahals. Bhils and Balahis inhabited separate sections of the villages visited near Khandwa. In the last census it was reported that the Bhils were 'a very mixed lot'; a condition that was also confirmed by Dr. Guha for the Bhils that he measured in the Vindhya Hills (Guha, 1935). A marked variety of physical types was seen among the Hinduized Bhils whom I visited, but the prognathous, thick-lipped, often weak-chinned, platyrrhine aboriginal type with high cheek bones, pronounced supra-orbital ridges and depressed root of the nose was infrequent. This is the type which Guha (1935, 1939) designated as *Nishadic* or Proto-Australoid, and its various facial characteristics seem to segregate out in individuals (see figures 7 and 8). None was seen with light coloured eyes.

If, as their blood group distribution indicates, the Balahis are closer to the more highly cultured folk living to the north-west of them, we have here an interesting example of a race more primitive physically and culturally—the Aboriginal Bhils—ranking higher in the Hindu socio-ritualistic scale than a people who are by descent more specialized or advanced in these respects—the Balahis. The degraded position of the latter is

perhaps partly due to their feeding habits, to their occupation of weaving (Russell) and also to the fact that they are a mixed caste with accretions from outcastes (Fr. Fuchs private communication).

Last year a few Hindu and Muslim Bhils from the Ajanta Hills were grouped in Hyderabad (Macfarlane, 1940) and an exceptionally high number, even for India, were found to belong to Group B. Khandwa was chosen to get more data because it is not far, about a hundred miles, from the Ajanta Hills. In 1939 Dr. W. Koppers took measurements and grouped bloods of Bhils in Jhabna State to the north and Korkus in Berar, but his data are not yet available. Father S. Fuchs was Dr. Koppers' assistant and I was fortunate to have his help in the Nimar.

The Hindu Nimar Bhils are friendly with the Christian missionaries who introduced me to them in some villages fifteen to twenty miles south-west of Khandwa. At first I was well received, but later their suspicions were aroused by some wise-acres at the weekly market, and I was unable to get the two hundred bloods as desired. After subtracting some close relatives data from 140 were left.

These Bhils also show a very high percentage of Group B and an unusually large amount of Group AB (Table I). The latter is indicative of heterogeneity. If Group AB people are taken into consideration then 58.8% of these Bhils possess agglutinin B and 40% possess A. The Bhils in Hyderabad had Group B 52.3%, Group AB 2.3%. In all blood group samples for India of over one hundred available so far, only these Bhils, the Nimar Korkus and the Paniyans of South Malabar show a frequency for Group O (r) of under 0.50. The Paniyans have very little B. The fact that Guha (1935) found a definite association in CRL between the Bhils and the Chenchus is interesting because it suggests their possible relationship with the southern tribes of aborigines. The Chenchus resemble the Paniyans, alone among Indian tribes, in having a preponderance of Group A over Group B. If the Bhils are found to have southern affinities, this will further support the observation that as the southern aboriginal tribes migrated northwards they seem to have accumulated more of Group B, e.g. the Mālés and Oraons of Bihar (Macfarlane and Sarkar), see Table III. Excluding the Paniyans and Oraons, each of whom stand distinct serologically, there is seen to be relatively little variation in p (Table III), only 8%, between the four widely separated tribes Chenchu, Mālé, Korku and Bhil; whereas q increases among them 21% from south to north and east. The Chenchus and Mālés are Dravidian speaking, while both the Korkus and Bhils are believed to come from Mundari-speaking ancestors. The percentages of Groups B and AB in the Korkus and Bhils show some similarity with those found in the Todas of the Nilgiri Hills, South India, but the

latter have a lower frequency for the gene B, $q = 0.278$, as well as for gene A, $p = .157$, frequencies which are more like those found in the Santals, the non-caste Hindus of Bengal and the Depressed Classes of the Deccan. The racial affinities of the Todas are no doubt very mixed. They may have migrated to their present location from north central India, but there is nothing in their blood group distribution to support a Proto-Nordic descent. Their serological resemblance to other tribes in India is probably more significant than their resemblance to the Ainu in blood group distribution. (See Boyd's Tables 1939.)

The value for D/σ for these Bhils does not indicate a genetic instability, therefore the various racial elements in their blood group distribution have reached equilibrium. The high percentage of Group AB shows heretozygosity.

The *Korkus* are at present the westernmost tribe of those who speak a Mundari dialect (Grierson). At the time of the 1931 census there were 176,616 of them in the Central Provinces and Berar; 52,172 were returned for the Nimar District. They are believed (Russell) to be racially akin to other tribes in the Mundari-speaking group such as Baigas, Kois, Korwas, and Nahals of the C.P.; Mundas and Santals of Bihar. Their sept names are the same as those of the Kols (Russell). They will not eat with Gonds, but Gonds, also Mangs and other lower castes, accept food from them. Physically many of them resemble Guha's Proto-Australoid type (figures 5 and 6).

Most Korkus are timid, suspicious of strangers and difficult to contact. I am indebted to another Christian missionary through whose good offices I received the co-operation of the village Patel at Kanapur (Thomog on old maps) who employs many Korkus from neighbouring villages as agricultural labourers. These villages are some fifteen miles east of Berhanpur near the Berar border. After subtracting some persons belonging to the same family 140 individual blood samples were left.

The Korku village is unlike anything I have yet seen in India. The low wattle and thatch huts are built in two continuous straight rows on either side of a very wide central street. There is a space between the walls of two houses, usually, only where a street crosses.

The Korku data show a close resemblance to those of the Bhils (Table I) with slightly more of A and less of B. The differences are not significant and the χ^2 test¹ for the two gives the values $\chi^2 = 1.33$, $P = 0.73$ (kindly calculated by Mr. S. S. Sarkar), which demonstrated that they are samples from a genetically undifferentiated population as far as blood groups are concerned.

¹ By the χ^2 test Todas and Korkus are also undifferentiated ($\chi^2 = 5.85$, $P = 0.12$) while Bhils and Todas are significantly differentiated ($\chi^2 = 15.14$, $P = .0017$) according to Mr. Sarkar's calculations.

As in the Bhil data the relatively high percentage of Group AB in Korkus shows some heterozygosity but the low value for D/σ indicates genetic stability for the blood groups at present. There are no published data of physical measurements from the Korkus but Dr. Koppers took some in Berar. In Nimar the Korkus speak Hindi, and have the status of a backward tribe under the Government. In the Hindu social scale the hinduized Korkus are on an equal footing with the Bhils. At Kanapur and elsewhere the Nahals, who are also of aboriginal stock (also classified as a backward tribe officially), do the lowest menial work as serfs of the Korkus. They were hunters and herb gatherers who have been exploited by the agricultural Korkus and are on the road to becoming a depressed, 'impure' caste. Hinduized Nahals rank a little higher than Balahis (Father Fuchs private communication).

Munda Blood Groups.

In October 1940 I obtained blood group data from 120 Mundas workers in the ore mines of south-east Bihar. They were from the Singbhum District, Bihar, and from the neighbouring Orissa States of Keonjhar and Mayurbhanj. This sample is therefore free from familial strains. The three main blood groups were found to be about equally distributed in these Mundas (Table I). Sarkar (1941) by applying the χ^2 test has found that these Munda data and his Santal data from the Santal Pergannas, Bihar, are samples from an undifferentiated population serologically. Among the Mundas and Santals 37% and 31% possess agglutinin A respectively and 36.7% and 46% respectively carry B. The Korkus like the Bhils have an unusually high concentration of both agglutinogens, 42% of them have A and 52% have B. Isolation combined with differential fertility might produce the Korku type of blood group distribution, with excess of Group B, from a Munda-Santal type with equal amounts of A and B. If these Mundari-speaking people are another racial stock which entered India later than the southern aborigines, they have accumulated more of B as they proceeded west just as the southern tribes have as they came north (Macfarlane and Sarkar). The source of all this B is debatable. Statisticians have found that mutation is an unlikely source (Boyd, 1940) because the blood groups have no selective value and no indication of a high mutation rate has yet been discovered in family studies.

So far the only communities found in India with values for q of 0.26 and over are the Bhils, Korkus, Chamārs, Deccan Depressed Classes and several lower castes in south Bengal (Macfarlane, 1938). There may have existed an ancient stock in north central India, rich in B like the Oraons and like them a branch of the southern aborigines (Macfarlane and Sarkar)

which has been submerged nationally; now, degraded and exploited among the depressed classes, the race shows its effect in this dominant gene which seeps into every stock that comes to the Ganges Basin and central India.

In this way the Korkus and Bhils could be a product of a southern stock assimilated by the invading Mundari-speaking tribes who were later submerged themselves, to a large extent, by the Aryan-speaking invaders. Blood group studies therefore may give evidence for the existence of an older human stratum than those already recognized in this part of India.

The *Pardhis* are an aboriginal, nomadic tribe of hunters of central India. A band of *Pardhis* was awaiting trial at the jail at Khandwa and the authorities kindly allowed me to visit them for blood samples. There were only nineteen including a father and son (both Group B), three brothers (all Group O) and two brothers (both Group B). If only one member of a family is included that leaves fifteen bloods which were distributed thus: Group O—6, Group A—4, Group B—4, Group AB—1. This indicates that the *Pardhis* are well supplied with both agglutinogens. All the men had dark brown eyes and very dark skins, but they showed considerable structural variation and included pronounced aboriginal types (figure 4) as well as some who resembled the type Guha (1937) designates as the Indus or Mediterranean type (figure 3). Similar variations in racial type were recorded in the *Todas* by Cipriani.

Blood Types in Mundas and Bhils.

Only a small quantity of anti-M and anti-N test fluids were available. Since there are no data for blood types among Indian aborigines 65 Mundas in the Singbhum District, Bihar, were tested with anti-N and 57 Bhils in the Nimar, C.P., were tested with anti-M. The values for the frequencies m and n of the two genes were calculated from the formulae $n = \sqrt{N}$, $m = \sqrt{M}$ (Boyd, 1939) and are given in Table IV together with the percentages of the three types. These inadequate data indicate that these tribes possess less of M and more of N than the general population of Bengal (Greval, Macfarlane, 1939). It is interesting that the Mundas, who physically show fewer signs of racial intermixture (Macfarlane and Sarkar), have more N than the Bhils. Values for n of over 0.50 are listed by Boyd (1939) in peoples to the east of India only for the Ainu, Indonesians, Javanese, Sudanese and Australians. Blood type N seems to predominate more in the primitive races and early inhabitants.

SUMMARY.

1. The Balahis, lower caste weavers of the Nimar District, C.P., show more relationship, serologically, with the Mahrattas,

Rajputs, Jats, and Pathans west and north of them than with the Depressed Classes. They have the three main blood groups in equal proportions with a little more of Group A than of Group B.

2. The Bhils have high percentages of groups B and AB and the highest frequency for gene B yet found in India. The Korkus and Bhils are very similar in blood group distribution and seem to belong to an undifferentiated population.

3. There is some resemblance between the Korku and the Toda blood group distributions. It is suggested that the Korkus and Bhils, even if descended from Mundari-speaking ancestry may also have ancient affinities with the southern aborigines (Chenchus and Paniyans) from whom they differ serologically chiefly in possessing more B.

4. The Mundas of the Singbhum District, Bihar, show the three main blood groups equally distributed, but they do not differ significantly serologically from the Santals who have more of B.

5. As the Mundari-speaking tribes migrated westward in India, they accumulated more of Group B, perhaps from an aboriginal people with southern affinities whose descendants now are represented in the Depressed Classes.

6. A few of the nomadic aboriginal Pardhis showed all three blood groups present and a marked variation in racial types.

7. Mundas and Bhils, in small samples, each show less of type M and more of type N than the general population of Bengal.

ACKNOWLEDGMENTS.

These investigations were made possible through a grant-in-aid from the Royal Society, London. I am also indebted to the friends, missionaries, and local officials who gave valuable help, particularly to Father S. Fuchs, S.V.D., for help and criticism.

BIBLIOGRAPHY.

- Boyd, W. C., (1939).—Blood Groups. *Tabulae Biologicae*, 17: 113-240.
 ——— (1940).—Critique of Methods of Classifying Mankind. *Am. Journ. Phys. Anthropol.*, 27: 333-364.
 Cipriani, L., (1937).—I. Toda. *Arch. per l'Antrop. e la Etnologia*, 67: 1-59.
 Guha, B. S., (1935).—Racial affinities of the peoples of India. *Census of India, 1931*, 1: pt. 3: 1-116.
 ——— (1937).—An outline of the racial ethnology of India. Calcutta.
 Fuchs, S., (1940).—The Funeral Rites of the Nimar Balahis. *Primitive Man*, 13: 49-79.
 Greval, S. D. S., et al., (1939).—On M and N in blood groups; the technique of typing, the antifuuids, findings in 300 Indians. *Indian Journ. Med. Res.*, 26: 1041-1054.

- Grierson, G., (1906).—*Linguistic Survey of India*. Vols. 2 and 4. Calcutta.
- Macfarlane, E. W. E., (1938).—Blood Group distribution in India with special reference to Bengal. *Journ. Genetics*, 36: 225-237.
- (1939).—Mother and Child combinations of blood groups and blood types and their development in Bengalis. *Journ. Roy. Asiatic Soc. Bengal, Science*, 5: 71-86.
- (1940).—Blood Grouping in the Deccan and Eastern Ghats. *Ibid.*, 6: 39-49.
- and Sarkar, S. S., (1941).—Blood Group distributions in twelve aboriginal tribes in India discussed. (In the Press.)
- Majumdar, D. N., (1940).—Blood Groups and their distribution in certain castes in the United Provinces. *Science and Culture*, 5: 519-522.
- Russell, R. V., (1916).—Tribes and Castes of C.P., India.
- Sarkar, S. S., (1941).—Analysis of Indian blood group data with special reference to the Oraons. (In the Press.)
- Venkatachar, C. S., (1935).—An Ethnographical account of the Bhils of Central India. *Census of India*, 1931. 1: pt. 3: 51-60.

TABLE I.

The distribution of blood groups in three Nimar castes and in Mundas of South Bihar

People.	No.	Nos. and Percentages in Groups.				Frequencies.			D/σ
		O	A	B	AB	p	q	r	
Balahis	200	61 30.5	64 32.0	60 30.0	15 7.50	.222	.209	.552	1.2
Bhils ..	140	26 18.57	33 23.57	58 41.43	23 16.43	.218	.344	.431	0.3
Korkus	140	28 20.0	40 28.57	53 37.86	19 13.57	.250	.313	.447	0.4
Mundas	120	40 33.33	36 30.0	45 29.17	9 7.50	.219	.214	.577	0.6

TABLE II.

Serological value A-B of Mundas, Nimar castes and related peoples, in ascending order.

Race or Caste.	(A-B)	Race or Caste.	(A-B)
*Todas ..	- 18.5	Mahrattas ..	- 7.2
*Bhils ..	- 17.8	Rajputs ..	- 5.0
*Santals ..	- 13.9	Pathans ..	- 2.0
Jats ..	- 11.0	*Mundas ..	- 0.8
*Korkus ..	- 9.3	Baluchs ..	0.0
*Maria Gonds ..	- 8.1	Balahis ..	+ 2.0

Aboriginal Tribes.

TABLE III.

Blood Group gene frequencies in some southern and Nimar aborigines compared, in ascending order of q.

Tribe.	<i>p</i>	<i>q</i>	<i>r</i>
Paniyan ..	·461	·078	·447
Chenchu ..	·252	·133	·608
Mālā ..	·167	·181	·649
Oraon ..	·088	·219	·686
Toda ..	·157	·278	·545
Korku ..	·250	·313	·447
Bhil ..	·218	·344	·431

TABLE IV.

Blood Types and their frequencies in Mundas and Bhils.

Tribe.	No.	Percentage in Types.			Frequencies.	
		M	MN	N	<i>m</i>	<i>n</i>
Munda ..	73	23·29	49·99	26·73	48·3	51·7
Bhil ..	57	31·4	49·23	19·30	56·1	43·9



FIG. 1. Balahi girl.



FIG. 2. Profile of 1.



FIG. 3. Pardhi man.



FIG. 4. Pardhi boy.



FIG. 5. Korku man.

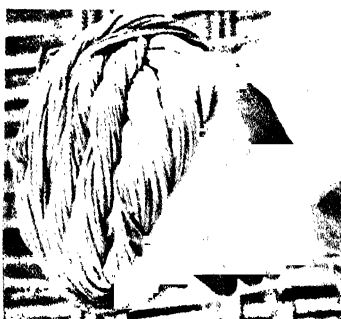


FIG. 6. Profile of 5.



FIG. 7. Bhil man.



FIG. 8. Profile of 7.

Observations on an intestinal flagellate, *Tetratrichomastix hegneri*, sp. nov., from the 'skipping frog' *Rana limnocharis* Meig.

By P. L. MISRA.

(Communicated by Dr. K. N. Bahl.)

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INTRODUCTION.

During my short stay at the Protozoological section of the Imperial Veterinary Research Institute, Mukteswar-Kumaun in March 1940, I examined half a dozen specimens of the 'skipping frog' *Rana limnocharis* Meig.¹ for protozoan parasites in their guts. Besides Coccidia, *Entamoeba*, trichomonad flagellates and ciliates, I found a flagellate, which showed the characters of the genus *Tetratrichomastix* Young, 1935, in the posterior part of the intestine and rectum in two out of six specimens. This flagellate is the first of its kind to be recorded from India and second of its type to be described from a vertebrate host. I give below a morphological account of this organism which I have named *Tetratrichomastix hegneri*, sp. nov., after Prof. R. Hegner of John Hopkins University, who has made valuable contributions to our knowledge of the trichomonad flagellates.

MATERIAL AND METHODS.

The frogs were collected from a small pond at a height of about 6,000 ft. in the lower Himalayan range, about 4 miles away from the Mukteswar Institute. Fresh cover-glass preparations of the gut-contents, either as such or diluted with a little normal saline, were made and these flagellates along with

¹ The frogs were identified at the Indian Museum through the kind courtesy of Dr. S. L. Hora.

other protozoa occurring in association were examined in the living condition. Intra-vitam staining with neutral red was also employed to study the movement of the organisms in the living condition. Air-dried films of the gut-contents were fixed in acetone-free methyl alcohol and stained with dilute Giemsa to ascertain the number of flagella. For other structures, wet smears were fixed in hot sublimate-alcohol or Bouin's fluid and stained with iron-alum haematoxylin after the method of Heidenhain.

OBSERVATIONS ON *Tetratrichomastix hegneri*, sp. nov.

The flagellates show characteristic jerky movements when examined in fresh condition. This type of movement at once reminds that of *Monocercomonas bufonis* Dobell (1908, 1909), or *Eutrichomastix* (*Trichomastix*)¹ *batrachorum* Dobell (1909), and, is perhaps due to the fact that the anterior flagella beat backwards in unison. The posteriorly directed flagellum also vibrates rapidly but it does not extend forwards up to more than three-fourths of the body from the posterior end during its lashing movements. It was impossible to count the number of flagella in the living condition, as the organisms are exceedingly active. Intra-cytoplasmic portion of the axostyle was not visible in the living condition, but its free portion, which is flexible and bends during movement, was often visible. To this free axostylar portion are attached minute particles of debris; whether this attachment is due to some axostylar secretion is difficult to ascertain. Occasionally, it was noted that certain individuals remained attached to the mass of debris by their free axostylar ends and could not free themselves. The cytostome is undetectable and the nucleus is also indistinct in the living condition.

In appropriately fixed and stained preparations, the body appears to be irregularly pyriform, with its one side more convex than the other. The periplast is distinct. At the anterior end there often appears a cleft or groove situated on the more convex border of this end and this represents the cytostome of the organism (Pl. 3, fig. 1), while on its left there is a dent at its anterior extremity through which all the flagella appear to come out (Pl. 3, fig. 2). The presence of this groove affects the symmetry of the organism which is approximately bilateral. The four anterior flagella usually adhere together and can be made out only by counting their free extremities. Specimens with well-spread-out flagella were also encountered and it was from these that one could make out the four anterior flagella which were equal in length and slightly longer than the body. All the five

¹ The generic name *Trichomastix* was pre-occupied by an insect, hence Kofoid and Swezy (1915) introduced the name *Eutrichomastix* as a substitute for it.

flagella arise from a single basal granule which normally remains apart from the nucleus though in certain specimens it was seen attached to the nuclear membrane (Pl. 3, fig. 3): this latter condition is caused, in all probability, by shrinkage of specimens during the preparations of smears. The basal granule stains deep-pink with Giemsa and black with iron-alum haematoxylin. There is no rhizostyle. The axostyle originates distinctly from the basal granule and during its course towards the posterior end bends round the nucleus but never pierces it. The axostyle consists of a deeply staining fibre or rod (Achsenstab) which stains pink with Giemsa. In haematoxylin-stained specimens it assumes a deep tint while in certain cases it presents a hyaline appearance with minute granules inside it (Pl. 3, fig. 4). The free portion of the axostyle is elongated and has a pointed end; in certain specimens it seems to be curved. There is no protoplasmic sheath around the free portion of the axostyle.

The anteriorly located nucleus is spherical or slightly ovoid in shape and has a thin nuclear membrane and a centrally placed endosome, surrounded by a faintly staining homogeneous area.

The cytoplasm is vacuolated and contains inclusions chiefly of bacterial nature. In a few specimens the cytoplasm was seen to contain coccus-like bodies, which probably belong to the genus *Sphaerita* (Pl. 3, figs. 4 and 6).

Although very few stages showing multiplication were seen but multiplication seems to take place by longitudinal fission. The basal granule divides into two daughter granules which move apart, one bearing two flagella and the other three (Pl. 3, fig. 5). It appears, therefore, that in subsequent stages three new flagella on one side and two new ones on the other develop from the daughter basal granules thus making five flagella for each daughter individual. Meanwhile, the nucleus divides into two and this division is followed by a longitudinal cleft at the anterior portion of the body, which deepens and divides the organism into two daughter individuals.

Encystment: The body of the flagellate becomes rounded (Pl. 3, fig. 6) and the flagella are lost,¹ but the basal granule persists (Pl. 3, fig. 7). At first a thin cyst-wall is secreted and in earlier stages the nucleus with its endosome is quite distinct, but the cyst-wall thickens later, and the basal granule divides into two parts which separate, move away from each other, and come to lie on the opposite sides of the spherical cyst. Between these two daughter granules extends a centrodesmose (Pl. 3, fig. 8).

¹ Mackinnon (1915) has given a series of sketches of the encystment of a trichomastigine, *Eutrichomastix* (*Trichomastix*) *trichopterorum* or *Tetratrichomastix parisi* (?), and has described that the flagella adhere to the body while rounding takes place and persist in fully formed cysts. I could not, however, detect the adherence of the flagella or their persistence in the cysts.

The cytoplasm of the cyst is clear. Further stages of division were not available.

Measurements:—

- (a) Length of the body exclusive of the free axostylar portion 5.6μ – 10.3μ ; average for 50 specimens 7.8μ .
- (b) Width of the body at maximum diameter 2.8μ – 5.6μ ; average for 50 specimens 4.6μ .
- (c) Length of the free axostylar portion 1.5μ – 4.2μ ; average for 50 specimens 3.2μ .
- (d) Diameter of the nucleus 1.4μ – 2.7μ ; average for 50 specimens 2.3μ .
- (e) Cysts 4.8μ – 6.3μ .

PREVIOUS WORK.

Mackinnon (1913) instituted the new sub-genus *Tetratrichomastix*, and described *T. parisii* as the type species of this sub-genus, which possesses an 'axostyle and five free flagella, four anteriorly, and one posteriorly directed'. *T. parisii* was found in the intestine of the grub of *Tipula*. In a later communication (1915) she described spherical cysts, 4.5μ in diameter, of a trichomastigine, but she was not sure whether these cysts belonged to *Eutrichomastix* (*Trichomastix*) *trichopterorum* or *T. parisii*. Becker (1926) described *T. citelli* from the caecum of the ground-squirrel *Citellus tridecemlineatus*. He regards *Tetratrichomastix*, without giving any reason, to be a 'sub-genus of *Eutrichomastix*'. Young (1935) raised the sub-genus *Tetratrichomastix* to the generic rank on the ground that 'The number of flagella is an important morphological feature, and since *Eutrichomastix* possesses three anterior flagella and the sub-genus *Tetratrichomastix* four anterior flagella, it seems desirable to raise the latter to the generic rank'. He described *T. blattidarum* from the posterior part of the intestine of different species of cockroaches, namely, *Blatella germanica*, *Blatta orientalis* and *Periplaneta americana*, and could successfully cultivate this organism in haemoglobin-saline medium. Kowalczyk (1938) described *T. mackinnoni* from the intestine of the larva of the Japanese beetle, *Popillia japonica*. These are the only reports, so far as I am aware, of the species of this genus recorded up to date.¹

¹ Sangiorgi (1917) cultivated a flagellate from human faeces and named it *Tetratrichomastix intestinalis*. But this flagellate had only four flagella (not five) and has been regarded by Dobell and O'Connor (1921) to be 'at all events, probably a coprozoic species of *Tetramitus* and not an intestinal flagellate'. Hence, Sangiorgi's flagellate is simply a misnomer and has nothing to do with the genus *Tetratrichomastix*.

During recent years, much attention has been paid to the study of trichomonad flagellates in order to find out the most reliable characters for classifying these organisms, but there is still little agreement on this point. Certain authors, as for example, Parisi (1910) and Young (1935), attach much importance to the flagellar apparatus only. Thus Parisi believes that the number and mode of attachment of the flagella are real points of systematic value, and on this basis he has resolved the genus *Trichomonas* Donné into three sub-genera, namely (a) *Trichomonas*, *sensu strictu*, with three anterior flagella and an undulating membrane, (b) *Tetratrichomonas* with four anterior flagella and a trailing flagellum, and (c) *Trichomastix*¹ with three anterior flagella and a trailing flagellum, without an undulating membrane. Mackinnon (1913) made a further addition to this list by describing the sub-genus, (d) *Tetratrichomastix*, which, according to her, bears exactly the same relation to *Eutrichomastix* (*Trichomastix*) as *Tetratrichomonas* does to *Trichomonas*.

Contrary to Parisi's suggestion, there are other authors who hold that the flagellar apparatus is not of paramount importance in classification. Thus, Doflein (1916) believed that *Trichomonas* and *Eutrichomastix* are varieties of the same form: in the former the trailing flagellum remains attached to the body forming an undulating membrane, while in the latter it is cleft apart forming the 'schleppgeissel'. Doflein's view is shared by Prowazek (1904), Dobell (1909), Martin and Robertson (1911), Reichenow (1918, 1920), Chatton (1920) and others, though other workers, for instance, Wenyon (1926), Bishop (1931), Das Gupta (1935, 1936), and also Dobell (1907) hold that *Eutrichomastix* is a distinct genus;² the latter group of workers thus regard the flagellar apparatus to be of diagnostic value.

Alexeieff (1911) gives five characters, viz., (1) the condition of the undulating membrane, (2) the dimensions of the axostyle, (3) the distribution of the extra-nuclear siderophilic granules, (4) the structure of the nucleus, and (5) the presence and form of the parabasal body, which when applied to the study of adult forms should form a reliable basis for classifying the species of *Trichomonas*. Mackinnon (1913) expresses her scepticism with regard to the characters laid down by Alexeieff as they are liable to fluctuation, particularly in those forms which happen to parasitize more than one kind of host. Further, she writes, 'it is by no means always easy to decide which is the typical adult form'. In support of her arguments she has referred to the case of *Eutrichomastix* (*Trichomastix*) and has asserted that 'two of the said characters, i.e. the parabasal body

¹ *Eutrichomastix*—vide foot-note, p. 2, p. 28.

² My observations on the intestinal flagellates of *Varanus monitor* (paper in preparation) also lead me to believe that *Eutrichomastix* is a separate genus.

and the condition of the undulating membrane, are necessarily absent, and this renders the species determination on morphological grounds increasingly uncertain'. Moreover, she has laid stress on the degree of the intensity of staining, which may give a false conspectus of the form under observation, and may lead a worker to regard it as belonging to a different species. For instance, she could distinguish two forms of *T. parisii*, viz., (a) with a darkly staining nucleus, which is compact and rich in chromatin blocks and is often surrounded by a halo of small, siderophilous, bodies (ingested bacteria?), and (b) with a relatively large, faintly staining nucleus, poor in chromatin masses and with much vacuolated cytoplasm staining relatively intensely. Although these forms never occurred side by side in the same preparation she has refrained from designating them as different species and is 'strongly of the opinion that the degree of intensity of the staining must be taken into account'. Personally, I am of opinion that besides the morphological characters as defined by Alexeieff, and the intensity of staining reactions (as suggested by Mackinnon), the nature of the flagellar apparatus and its relations with the nucleus are the most valuable criteria for the classification of trichomonad flagellates, and in this I agree with the suggestion of Parisi and Young.

SYSTEMATIC POSITION.¹

The presence of five flagella, four directed anteriorly and one posteriorly, and the absence of an undulating membrane at once determine the position of this flagellate as belonging to the genus *Tetratrichomastix* Young, 1935. In the shape and apparent bilateral symmetry of the body, and in the length of the free portion of the axostyle, *Tetratrichomastix hegneri* resembles *T. citelli* Becker, 1926, but differs from the latter in several characters; for example, in *T. citelli* the basal granule is attached to the nuclear membrane, the axostyle traverses the nucleus, the posteriorly directed flagellum and the anteriorly directed flagella are smaller in size as compared with the body length and the cytoplasm is less vacuolated (see Becker's figs. 16 and 18), whereas in *T. hegneri* the basal granule normally remains apart from the nuclear membrane, the axostyle never traverses the nucleus, the trailing flagellum and the anteriorly directed flagella are proportionately longer than the body and the cytoplasm is comparatively more vacuolated. In the length of its body, in the proportion of the lengths of the flagella as compared to the body-length and in the nature of its cytoplasm *T. hegneri* approximates *T. mackinnoni* Kowalczyk, 1938, but differs from the latter in the structure of the nucleus (in *T. mackinnoni* there

¹ Most of the descriptions given by the respective authors are very meagre, hence comparison has been made through their drawings.

is no endosome or endobasal body), in the relation of the basal granule to the nucleus (in *T. mackinnoni* the basal granule remains attached to the nuclear membrane), in the presence of a distinct periplast, and in the absence of a protoplasmic sheath round the free portion of the axostyle. In the structure of the nucleus mostly, in its relation to the basal granule, in proportion of the lengths of the flagella as compared to the body-length and in the nature of the cytoplasm, *T. hegneri* resembles *T. blattidarum* Young, 1935, but the latter differs from the former in the presence of a poorly developed axial fibre, measurements of the body and in the presence of two basal granules, from one of which arise the two anterior flagella and from the other arises the trailing flagellum along with the next two anterior flagella, as is evident from Young's single figure. *T. hegneri* differs also from *T. parisii* Mackinnon, 1913, in its shape, which in the latter is broadly pyriform or globular, in the structure of the nucleus (*vide supra*), in measurements of the body, and in the nature of the axostyle, which is poorly developed and is enclosed in a protoplasmic sheath, as is evident from Mackinnon's figures 30, 31, 32. Moreover, from her figures 30 and 32 it can be easily made out that there are two basal granules, from one of which arise the four anteriorly directed flagella and from the other arises the 'schleppgeissel', and in this respect also *T. hegneri* differs from *T. parisii*. In the light of these facts I consider *T. hegneri* to be a new species of the genus *Tetratrichomastix*.

The table on p. 33 shows the measurements, habitat, host, locality, etc., of the various species of *Tetratrichomastix*.

SUMMARY.

(1) The genus *Tetratrichomastix* is recorded for the first time from India, and a detailed account of *T. hegneri*, sp. nov., is given.

(2) *Tetratrichomastix hegneri*, sp. nov., is the second species of this genus to be recorded from a vertebrate host, the first being *T. citelli* Becker, 1926, from the ground-squirrel *Citellus tridecemlineatus*.

(3) A comparison of the hitherto known species of *Tetratrichomastix* is appended in a tabular form.

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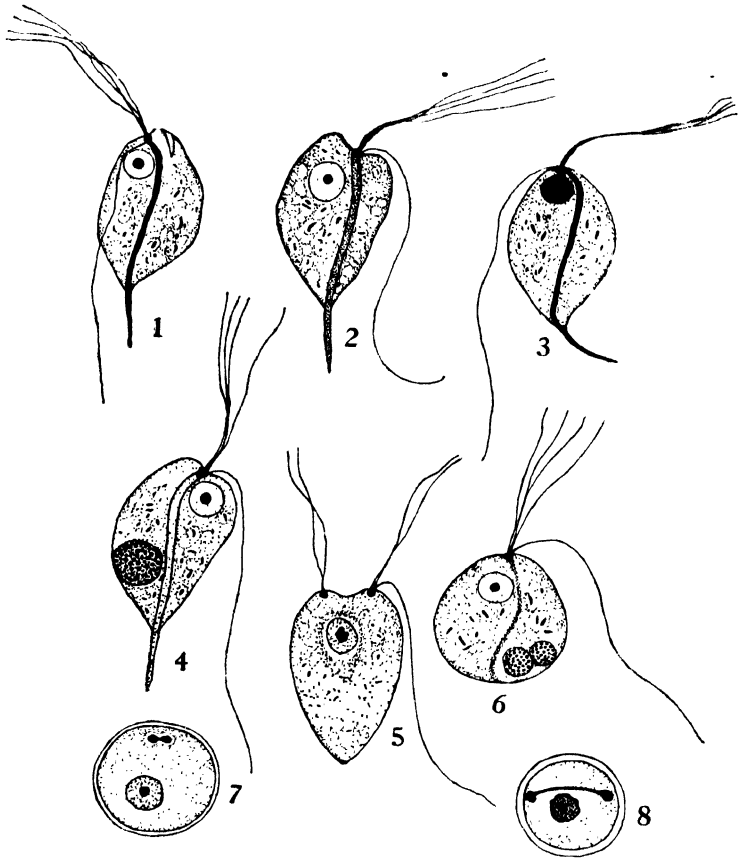
REFERENCES.

(References marked with * have not been consulted in the original.)

1. ALEXEIEFF, A., (1911).—Sur la spécification dans le genre *Trichomonas* Donné. *C.R. Soc. Biol.*, Paris, 71 : 539.
2. BECKER, E. R., (1926).—The flagellate fauna of the caecum of the striped ground-squirrel, *Citellus tridecemlineatus*, etc. *Biol. Bull.*, 51 : 287.
3. BISHOP, A., (1931).—The morphology and method of division of *Trichomonas*. *Parasitol.*, 23 : 129.
- 4.* CHATTON, E., (1920).—Culture indéfinie d'un *Trichomonas* intestinal du cobaye, essais de purification, action morphogène des milieux sur la membrane ondulante. *C.R. Soc. Biol.*, Paris, 83 : 69.
5. DAS GUPTA, B. M., (1935).—Some observations on pure line strains of *Trichomonas hominis* and *Trichomonas* of the snake, *Natrix erythrogaster* (a non-poisonous water-snake). *Journ. Trop. Med. (Hyg.)*, 38 : 148.
6. DAS GUPTA, B. M., (1936).—Observations on the flagellates of the genera *Trichomonas* and *Eutrichomastix*. *Parasitol.*, 28 : 195.
7. DOBELL, C., (1907).—*Trichomastix serpentis* n.sp. *Quart. Journ. Micr. Sci.*, 51 : 449.
- 8.* DOBELL, C., (1908).—On the intestinal Protozoan parasites of frogs and toads. (Prelim. com.) *Proc. Camb. Phil. Soc.*, 14 (4) : 428.
9. DOBELL, C., (1909).—Researches on the intestinal Protozoa of frogs and toads. *Quart. Journ. Micr. Sci.*, 53 : 201.
10. DOBELL, C. and O'CONNOR, F. W., (1921).—*The intestinal Protozoa of man*. London.
11. DOFLEIN, F., (1916).—*Lehrbuch der Protozoenkunde*, 4th ed., Jena.
- 12.* KOFOID, C. A. and SWEZY, O., (1915).—Mitosis and multiple fission in trichonad flagellates. *Proc. Amer. Acad. Arts. & Sci.*, 51 : 289.
13. KOWALCZYK, S. A., (1938).—A report on the intestinal Protozoa of the larva of the Japanese beetle (*Popillia japonica* Newm., Coleoptera). *Trans. Amer. Micros. Soc.*, 57 : 229.
14. MACKINNON, D. L., (1913).—Studies on parasitic Protozoa II. (b) *Tetratrichomastix parisii* n. sub-gen., n.sp. *Quart. Journ. Micr. Sci.*, 59 : 459.
15. MACKINNON, D. L., (1915).—Studies on parasitic Protozoa III. (b) The multiplication cysts of a trichomastigine. *Ibid.*, 61 : 105.
16. MARTIN, C. H. and ROBERTSON, M., (1911).—Further observations on the caecal parasites of fowls, with some reference to the rectal fauna of other vertebrates. Part I. *Ibid.*, 57 : 53.
17. PARISI, B., (1910).—Su alcuni flagellati endoparassiti. *Arch. f. Protistenk.*, 19 : 232.
- 18.* PROWAZEK, S. VON, (1904).—Untersuchungen über einige parasitische Flagellaten. *Arb. Gesundh. Amt., Berl.*, 21 : 1.
- 19.* REICHENOW, E., (1918).—*Eutrichomastix lacertae* en la sangre y en ácaros hématofagos. *Bol. Inst. Nac. Hig. Madr.*, 14 : 183.
- 20.* REICHENOW, E., (1920).—*Eutrichomastix lacertae* in Blut und im blutsaugenden Milben. *Zlb. Bakt. I. Abt.*, 84 : 466.
- 21.* SANGIORGI, G., (1921).—Flagellati nell' intestino umano. *Pathologica.*, 9 : 193.
22. WENYON, C. M., (1926).—*Protozoology*, Vol. I, London.
23. YOUNG, M. D., (1935).—Description, incidence, and cultivation of *Tetratrichomastix blattidarum* n.sp., from the cockroach. *Journ. Parasitol.*, 21 : 309.

TABLE.

Name.	Length of the body exclusive of free axostylar portion.	Nature of axostyle and length of free axostylar portion.	Width of the body.	Shape and size of the nucleus.	Cytostome.	Cyst.	Habitat.	Host.	Locality.
<i>T. parisi</i> Mackinnon, 1913.	8 μ -12 μ .	Poorly developed; measurement not given.	4 μ -7 μ .	Round or oval; measurement not given.	Not visible.	4 μ -5 μ .	Intestine.	Tipulid larvae.	England.
<i>T. citelli</i> Becker, 1926.	7 μ -13 μ .	Distinct; 2 μ -4 μ.	....	Round.	Indistinctly seen.	....	Caecum.	<i>Citellus tri-decemlineatus</i> .	N. America.
<i>T. blattidarium</i> Young, 1936.	8 μ -14 μ ; avg. 9 μ .	Slender; 1.5 μ -3 μ ; avg. 2 μ .	4 μ -8 μ ; avg. 5.5 μ .	Round.	....	....	Posterior part of intestine.	<i>Blatta orientalis</i> ; <i>Blattella germanica</i> ; <i>Periplaneta americana</i> .	N. America.
<i>T. machinonomi</i> Kowalczyk, 1938.	5 μ -10 μ ; avg. 7.2 μ .	Well-developed; 1/2-1/3 of body-length.	4 μ -9 μ ; avg. 5.7 μ .	Round.	Visible.	....	Intestine.	<i>Popillia japonica</i> .	N. America.
<i>T. hegneri</i> , sp. nov.	5.9 μ -10.3 μ ; avg. 7.8 μ .	Well-developed; 1.5 μ -4.2 μ ; avg. 3.2 μ .	2.8 μ -5.6 μ ; avg. 4.6 μ .	Spherical or slightly ovoidal. 1.4 μ -2.7 μ ; avg. 2.3 μ .	Visible.	4.8 μ -6.3 μ .	Intestine and rectum.	<i>Rana lim-nocharis</i> .	Mukteswar-Kumaun, U.P., India.



(All *Camera lucida* drawings drawn to scale : ca. 1400.)

Tetratrichomastix hegneri, sp. nov.

Figs. 1, 2, 3 and 4 show trophozoites; fig. 3, a trophozoite stained with Giemsa; fig. 4, an individual invaded by *Sphaerita*; fig. 5 shows a dividing individual; fig. 6, a rounded individual with two specimens of *Sphaerita*; figs. 7 and 8, cysts.

Racial Affiliation of the Gonds of the Central Provinces.

By D. N. MAJUMDAR.

The Gonds of the Central Provinces are an interesting people. Culturally they are superior to the wild tribes of India that live in the secure asylums of hills and fastnesses. They have from very early times come in contact with other racial groups, yet they have more or less maintained their cultural integrity. The record of their achievements forms the theme of their folk songs which are still sung in the fields and farms of Chattisgarh, in the Gond villages, that are scattered all over the central belt of India. The power and influence they wielded during the medieval period of Indian history survive still in various parts of the Gond country as not a few of the smaller states in these parts are ruled by families of Gond extraction.

The Gonds have been taken by some scholars as the true autochthones of peninsular India. Some have affiliated them with the pre-Dravidians of the south, while others trace them to a short long and moderately high headed type of aborigines with flat nose and thick lips. In an able survey of migrations of castes and tribes into Central India, Mr. C. S. Venkatachar discusses the problem of the Gonds (Census Report of India, 1931, Vol. I, pt. III, B, pages 60-68). 'The latter', according to him, 'may be the pre-Dravidians of the south on whom the Dravidians have imposed their language and due to some causes in the regions of north-east Madras, there must have been a large scale displacement of the tribes into the interior of the central regions.' The pre-Dravidians of which Mr. Venkatachar speaks in this connection (*ibid.*, p. 61) are 'a dark Negroid race of low culture characterized by a physical type of very short stature, low forehead and flat face and nose'. There has been of late some support in favour of a Negrito substratum in India. Dr. B. S. Guha has drawn attention to the existence of a Negrito substratum in India (*Nature*, May 19, 1928, and June 22, 1929). Dr. J. H. Hutton has gone a step further, for he says, 'In any case the Negrito seems to have been the first inhabitant of south-eastern Asia. As already indicated, traces of this stock are still to be seen in some of the forest tribes of the higher hills of the extreme south of India' and similar traces, he argues, 'exists in the inaccessible areas between Assam, Burma and elsewhere' (*Man In India*, Vol. VII, 257-62). Dr. Eickstead does not admit the existence of the Negritos in India (*Die Rassengeschichte von Indien mit besonderer Berücksichtigung von Mysore*, *Zeits. Morph. Anthropol.* Bd. 32, pages 77-124, 1933) and Dr. G. M. Morant has provided some statistical evidence to show that

they had little to do with the composition of Indian races. (Morant, G. M., *A Contribution to the Physical Anthropology of the Swat and Hunza Valleys*, J.R.A.I., Vol. LXVI, Jan.-June, 1936).¹ Whether there was or was not a Negrito race in India is not very material to our discussion as the Gonds do not possess Negrito features.

The aboriginal population of India discloses four types according to Dr. B. S. Guha (*Census Report of India*, Vol. I, pt. III, A, pp. LXII-LXIII). A short long and moderately high headed strain with often strongly marked brow ridges broad short face, the mouth slightly inclined forwards and small flat nose with the alae extended (1). A dark pigmy strain having spirally curved hair, remnants of which are still found among the Kadars and the Pulayans of the Perambicullan Hills (2). A brachycephalic Mongolian type constituting to-day, the main component of Assam and North Burma (3). A second Mongoloid strain characterized by medium stature high head and medium nose but exhibiting like (3) the typical Mongoloid characteristics of the face and the eye. This element constitutes the major strain in the population of the hills and not inconsiderably of that of the Brahmaputra valley (4).

The first of these types according to Dr. Guha is predominant among the aboriginal population of central and southern India and also have penetrated into the lower strata of the Indian caste groups. The Gonds do not wholly answer to the aboriginal type described by Dr. Guha as there are among the Gonds an appreciable number of individuals with short stature, long heads comparatively high cranial vault, faintly marked supraorbital ridges, broad short but orthognathous face with medium lips, prominent and long nose with the alae moderately spread, complexion varying from light brown to dark tawny brown, dark brown eyes and black straight or wavy hair. This type represents the bulk of the population of the peninsular and considerable portion of northern India. At one extreme this type has mixed with a lighter but dolichocephalic type in the north, and in the south, with the aboriginal type so that the various tribes and groups upper and lower in the south as well as in the north represent to-day mixed ethnic groups. The Gonds as suggested by their physical features are a mixed people. There is no Mongoloid traits among the Gonds though from cultural similarities Dr. J. H. Hutton thinks there are. (Dr. J. H. Hutton's Introduction to W. V. Grigson's *Maria Gonds of Bastar*).

In an earlier paper (Presidential Address, Anthropology Section of the Indian Science Congress, 1939) I compared the somatic characters of the various cultural groups in Bastar

¹ In the paper mentioned by the author, no statistical or other evidence is provided by Dr. Morant against the existence of a Negrito racial strain in India. Ed.

State of the Eastern States' Agency, and pointed out the intra-group racial variability within the State. Since then the statistical data were worked out by me in greater detail and I feel justified in presenting the results in a systematic way.

Bastar is a large State with an area of 13,725 square miles, lying between 17° 46' to 20° 14' N and 80° 15' and 82° 1' E. To the north of Bastar lie the Kankar State and the Dhamtari Tahsil of Raipur district, to the east is situated the State of Jeypore also under the Eastern States' Agency. The Godavari river forms the part of the southern boundary of the State and the Chanda district lies to the west. The central and north-western part of the State is rugged and mountainous. A plateau with an elevation of approximately, 2,000 ft. above sea level lies to the eastern part of the State running from north to south. Jagdalpur the capital of the State lies to the south of the plateau. The Indravati river which joins the Godavari after forming the southern boundary of the State, flows across the centre of the State from east to west thus partitioning it into two portions. The north-western is covered by a mass of rugged hills known as Abujmarh which affords shelter to the most primitive but the most attractive section of the population, viz. the Maria Gonds.

The ruling family of Bastar belongs to a Kshatriya clan. The founder of the family was one Annam Deo who belonged to the royal family of Warrangal. On the advice of his tutelary goddess he fled from Warrangal to escape the pursuit of the Mahomedan invaders. After traversing a long trek through the inaccessible areas followed by a mysterious jingle of bangles supposed to be the direction of the goddess who had instructed him through a dream not to stop unless the jingle disappeared and not to look backward so long the sound was audible, suddenly stopped on the other side of the Pairi river. The jingle of the bangles was silenced on account of noise caused by the wading of his followers through the water bed of the river and Annam Deo looked backward in suspense. The sound now finally disappeared and the river to-day forms the boundary between Kankar and Bastar States. The hereditary high priest of the temple accompanied him, so also some representative Rajput families and their camp followers. With them also was brought the sword of Dhanteswari which in the new shrine dedicated to her in Bastar provides the symbol of the goddess and even to-day the sword is worshipped in the Dhanteswari temple in Jagdalpur.

The native population of the State mostly belong to the Gond group of tribes and the immigrants and foreigners who have settled down in the area appear to have freely intermixed with the indigenes. The total Gond population in India according to the census of 1891 was 1,666,764. Since 1901 and up to the 1921 census the figures of Marias, Murias, Bhatras and

Parjas were included with Gonds, yet the strength of the Gonds was only 1,714,894. According to the census of 1931, the Marias number 181,095 so that if we deduct only the figures of Marias from the total for Gonds the latter do not show any increase in numerical strength. In the Central Provinces States the number of Gonds in 1911 were 578,752. It declined to 394,685 in 1921 and still went down to 369,303 in 1931. Thus the Gonds are showing a tendency to decline numerically. The population of Bastar State, according to the census of 1931, is 524,721 (263,248 males and 261,473 females), and those following tribal religions number 3,61,920 of which 181,390 are males and 180,530 females. The vital statistics of the State show that the population of the State is increasing by 5,000 every year.

Of the native population following tribal religions the Hill Marias are the wildest of the tribes in Bastar who are also enumerated in adjoining districts, in Vizagapatam and Hyderabad where they are known as the Koyas. The Hill Marias do not seem to have entered the social economy or adopted the culture pattern of Bastar. They are still accustomed to their nomadic life in the hills and jungles and supplement their gleanings in the forests by shifting cultivation called *Dippa* and *Penda* in these parts. The Bison-horn Marias have settled down on the plateau and the plains and have been more influenced by their contacts with the higher castes in the State than their wild brethren the Marias of Abujmarh. The Murias of Kondagaon and those of Narayanpur also known as Jhorias are more advanced than the Marias. They have left their forest life long ago and their occupation of the plains and the plateau has brought them in closer contacts with the immigrants and foreign elements in the population of Bastar. The Murias of Kondagaon who are scattered on either sides of arterial roads, have developed an extremely efficient social organization among them and the dormitory institution with its complicated code of rites and rituals, its elaborate system of rules and regulations serve to maintain the tribal solidarity and integrity which would otherwise have been exposed to the disintegrating influences that usually result from such contacts. The two sections of the Murias, viz., the Kondagaon Murias and the Narayanpur Murias, the latter called Jhooriyas by Glasfurd and Jhoria by Grigson, are not different in physical features though in culture, the Narayanpur Murias seem to be more Hinduized and advanced than the Kondagaon Murias. The latter live on the plateau and on the hills and their dormitory institution is more integrated than that of the Narayanpur Murias.

Besides the Marias and Murias, there are also other important cultural groups in Bastar. The Dhruvas otherwise known as Parjas (a generic name which includes a number of tribal groups speaking Oriya but originally belonging to one or other of the tribal groups living in Bastar and the neighbouring areas)

claim a higher social status than the tribes already enumerated. They have adopted the dialect of a superior cultural group and also some of the important traits characteristic of the latter. The Bhatras are a little higher in social scale than the Parjas. They have a few subgroups which claim distinct social status as a result of Hinduization. The Hinduized Bhatras put on sacred threads and consider those who still adhere to tribal prescriptions as inferior and thus have already closed their ranks to other tribes and groups. To-day, Bhatras who still intermarry with other groups have distinct lower social status. Both the Parjas and Bhatras live by permanent cultivation. The Parjas appear to have come earlier to Bastar than the Bhatras, as they provide the priests in Bhatra villages.

The Halbas appear to be culturally a dominant group as the language of the State is Halbi and the supposed military antecedents of the Halbas give them an importance which is reflected in their attitude to the other social groups. They have mixed with the tribal groups and even to-day mixed marriages between Halbas and the other Gond tribes have not been tabued. The Dhakars are certainly superior to the Halbas and are reputed to be descendants of Kshattriya families who followed the ruling family to Bastar but it appears that they too have not escaped infusion of aboriginal blood as is evident from the practice of widow remarriage and that of *Ghaita Pani* or the auction of widows by the State authorities to rehabilitate Dhakar families originally meant to provide a *jus connubii* for them.

Although the language of the State is Halbi which is a mixed dialect of Hindi, Oriya and Marhatti and is akin to Chattisgarhi which is spoken over wide areas in the Central Provinces, the inhabitants speak the various dialects of the Gondi language. The linguistic map of Bastar will show the zones into which the State may be roughly divided. In the northern border of the State, Chattisgarhi Hindi is spoken. The greater part of the eastern border has Oriya as its principal language. In the south-east some islands of Koya dialects are found which are very similar to Maria spoken in the State. Inside the State, Parjas and Bhatras speak dialects which appear to be akin to Oriya or very much influenced by it. In the south and south-east the language is Telugu while along the western border debased form of Marhatti is spoken by a number of scattered communities. The interior of the State is inhabited by various aboriginal groups who speak their respective dialects all affiliated to the Gondi, more or less influenced by border languages in accordance with their proximity to them or the intensity of their contacts with people speaking those languages. The only representative of the Munda speaking people perhaps are the Gadabas who are a small occupational group, palanquin bearers

by profession, living east of Jagdalpur but who now have lost much of their original culture traits.

Measurements were taken on 463 individuals belonging to 9 cultural groups in Bastar, viz., Dhakars, Halbas, Bhatras, Parjas, Gadabas, Murias of Kondagaon, Murias of Narayanpur, Dandami Marias and Hill Marias. We could get measurements of 51 Muria females from Kondagaon and Narayanpur and for purposes of comparison we measured 50 Nawagharia Gonds living in Akaltara, C.P. Sixteen characters were chosen for treatment and all measurements were taken with Herman and Rickenbooh's anthropometric instruments. The following measurements were recorded:—

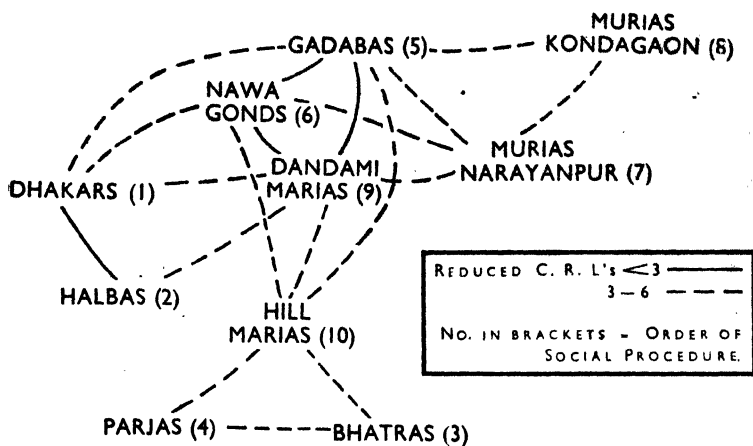
(1) Stature, (2) Span, (3) Auricular Height, (4) Maximum Head Length, (5) Maximum Head Breadth, (6) Maximum Bizygomatic Breadth, (7) Bigonial Breadth, (8) Nasal Length, (9) Nasal Width, (10) Nasal Height, (11) Orbitonasal Breadth, (12) Orbitonasal Arc, (13) Upper Facial Length, (14) Total Facial Length, (15) Nasion to Crinion, (16) Crinion to Menton.

In the case of females, span was left out for obvious reasons. Definitions of important measurements are given below. The head length was taken from the glabella to the most distant part of the occiput. Head breadth was first taken over the hair, then by parting the hair at points which gave the maximum diameter, the difference was however negligible. The facial height was taken as the distance between the nasion and the mid-point on the anterior surface of the lower jaw. The most depressed part at the root of the nose was taken as the 'nasion' for obvious difficulties in locating it. The bizygomatic breadth was measured by running the callipers backwards along the zygomatic arches until maximum reading was obtained. Nasal length was taken from the nasion to the subnasal point, i.e. at the angle formed by the septum of the nose and the upper lip. Nasal breadth was taken across the lateral surfaces of the alae 'with the nostrils deflated and the tip of the nose unwrinkled'. From the definitions above it will appear that most of the measurements are comparable to existing series. I have used nasal height for depth or elevation of the nose.

The crude data were sent to the Indian Statistical Laboratory, Calcutta, where they were calculated under Prof. P. C. Mahalanobis's supervision. My grateful thanks are due to Prof. Mahalanobis on this account. The coefficient of racial likeness crude as well as corrected were worked up at Lucknow by me with the assistance of Mr. S. P. Agarwalla, a student of mine also trained in Prof. Mahalanobis's laboratory. I am also much indebted to Dr. G. M. Morant of the Galton laboratory for the many valuable suggestions and general revision of the paper.

In computing the C.R.L. I have taken 16 characters only. But these characters are all absolute in the sense that they do not include any indicial relationship, though they represent linear,

arcal and characters denoting shape and size as well. The means and standard deviations of the characters have been given in Tables 1 to 5.



Statistical Analysis of Anthropometric Data.

If we take 0-3 as intimate association, 3-9 as association and above 9 as divergence (?), we get the relationships as shown in the diagram above. It shows the alignment of the different cultural groups with respect to the Hill Marias who are the most primitive group in Bastar and shows the affiliation of the Dhakars to the other cultural groups. The Nawagharia Gonds as we have already pointed out do not belong to Bastar but they afford a basis of comparison of the data on the cultural groups of Bastar with Gonds of other parts.

The arrangement above indicates the closer affinity of the Hill Marias to the Bhatras, Parjas, Dandami Marias, Nawagharia Gonds, Gadabas and Murias of Narayanpur than to the Murias of Kondagaon, the Halbas and Dhakars. The Dhakars show intimate association with the Halbas, but also show affinity to the Murias of Narayanpur, Gadabas, Dandami Marias and Nawagharia Gonds. The association of the Dhakars with the Hill Marias, Murias of Kondagaon, Parjas and Bhatras is not very close as will appear from the values of the coefficients of racial likeness. These relations indicate a large scale ethnic miscegenation in Bastar and it may be suggested that the groups speaking the same or allied languages are more intimately related than those speaking different dialects. The Murias of Kondagaon, however, presents a difficulty, for it is well nigh certain that they belong to the same stock as the Murias of Narayanpur and cultural differences, that have been brought out between them by Grigson, do not support the theory of separate origin of these two groups.

The mean age in the case of the Murias of Kondagaon is 25.10 ± 0.73 , and the standard deviation of age is 5.24 ± 0.51 , while the corresponding values for the Murias of Narayanpur are 29.33 ± 1.23 and 8.87 ± 0.87 . The standard deviations of the age distribution of the two groups show that the Murias of Kondagaon measured by me were a more homogeneous group than the Murias of Narayanpur and the reason was that the Murias of Kondagaon included the inmates of two dormitories and as such a certain age grade preponderated in the crowd. Otherwise it is not possible to explain such differences between them. We have already described in "Culture Contacts and Acculturation", Presidential Address, Anthropology Section, Indian Science Congress, 1939, the strong dormitory organization among the Murias of Kondagaon and this is incompatible with a large scale or free crossing of the Murias with other groups. Further corroboration of the above will be found in the low values of the standard deviations of the absolute characters.

The close affinity between the Dhakars and the Halbas, both immigrant groups in Bastar is to be expected. Also the arrangement in the diagram shows a closer correspondence with social status than with the geographical distribution of the groups. The Parjas and Bhatras though they speak Oriya or some patois with preponderating Oriya influence do not differ much from the Hill Marias, so that the racial affiliation with the latter is established. The Nawagharia Gonds are not a closed group and so also the Dandami Marias and the association of the latter with the Dhakars and Halbas may mean an intermixture which is popularly admitted in Bastar. This intermixture therefore explains the absence of an intimate association of the Dandami Marias with the Hill Marias. Gadabas do not represent a pure ethnic stock and though their dialect may be traced to Munda origin their physical features do not warrant such affiliation.

A discussion of the significance ratios provides further evidence of the inter-relation of the cultural groups as suggested by the C.R.L. method. The significance ratio is the difference of the means expressed in terms of the square root of the sum of the squares of the probable error of the means and is calculated from the formula :

$$\frac{\Delta m - m'}{\sqrt{(P.E.m)^2 + (P.E.m')^2}}$$

The significance ratio is taken to determine how far on the basis of the laws of chance sample m and sample m' might have been drawn at random from a single population. Although this ratio should not be interpreted as a measure of the degree of racial difference, it may indicate how far the two samples are entitled to 'separate consideration and mutual comparison'.

The means and standard deviations of 16 physical characters for the entire series are to be found in Tables 1-7. In comparing the constants a difference greater than *three* is taken as significant, and a difference between 2 and 3 as *doubtful* and below 2 as insignificant. In Table 5 (pp. 54-56) the significance ratios are given, only values above 2 are recorded.

The Parjas appear to be the tallest group with a mean stature of 162.32 ± 0.88 , next come the Hill Marias with 162.06 ± 0.69 . The Dandami Marias are the next tall group. The Halbas and Dhakars occupy the 7th and 8th places in stature with 158.17 ± 0.83 and 158.09 ± 0.72 . The significance ratios for stature affiliate the Hill Marias with the Parjas, Bhatras, Narayanpur Murias while they are entitled to separate consideration from the Dhakars Halbas, Gadabas, Nawagharia Gonds and Kondagaon Murias while their relations with Dandami Marias are doubtful. Unlike many areas, the mountain group is found to possess the tallest stature and better general health than the settled groups. The Dandami Marias are certainly an offshoot of the Hill Marias but they possess to-day a smaller stature than their wild brethren. The higher groups which are known to have freely mixed with the tribal people possess smaller stature compared with the latter, so that the invading groups in Bastar did not probably belong to any tall stock.

The span measurements do not tell a different tale. There is a correlation between stature and span so that the group with the highest mean stature possesses the highest span measurement. The significance ratios between the Dandami Marias and Dhakars, Gadabas and Kondagaon Murias and Halbas are doubtful. The Hill Marias differ significantly from the Dhakars, Gadabas and Kondagaon Murias but the significance ratio between them and Halbas is (2.24) indicating doubtful relationship. The Bhatras differ significantly from the Dhakars (3.90), Gadabas (3.22) and Kondagaon Murias (3.85).

From the head measurements it appears that there is a progressive lengthening of the head towards the mountain regions as is illustrated by the fact that the Hill Marias possess the longest head (184.57), next to them come the Bhatras with (184.43) and then the Kondagaon Murias (183.58). The Bhatras are immigrants while the Kondagaon Murias inhabit hilly tracts. The mean headlength for the Gadabas and Dhakars are (182.77) and (182.26) respectively. The Halbas possess the lowest mean headlength (179.82) which compares favourably with that of the Dandami Marias (180.50). There is no doubt that the Halbas are more mixed than the Dhakars and their admixture with the Dandami Marias is perhaps responsible for the lowering of the mean head length for the latter as well. The mean head breadth for the mountain groups, viz. the Hill Marias and Kondagaon Murias are less than those of the Halbas, Dhakars and Nawagharia Gonds who are plains people. The Parjas have the

highest mean head breadth (140.48), then come the Halbas with (139.82) and Bhatras (138.94). The cephalic indices (calculated from the mean head length and head breadth of the groups) confirm the suggestions already made above, for the Hill Marias (74.20), Kondagaon Murias (73.04) and Gadabas (74.27) possess an index below 75, the Bhatras (75.33), Dandami Marias (75.96), Dhakars (75.17), Nawagharia Gonds (75.31) possess an index between 75 and 76, while the Parjas (77.79) and Halbas (77.75) show a tendency to brachycephaly. The Gadabas have mixed with the Murias, for to-day, the Gadabas do not consider themselves different from the Murias though linguistically they may be affiliated to the Munda speaking groups of Chota-Nagpur in Bihar. The cephalic index of the Munda tribes is not higher than 75 and even if the Gadabas have mixed with the Murias there has not been any change in the value of the index. The Dhakars and Halbas as well as Parjas and Bhatras appear to have been originally mesocephalous or brachycephalous and their mixture with the indigenous groups who are dolichocephals may have contributed to a pronounced mesocephaly in their head form. The Muria females possess a mean cephalic index of 74.48 indicating a close approximation to the Muria males.

In the Bizygomatic measurement, significant ratios are found between Kondagaon Murias and Bhatras (4.10), Kondagaon Murias and Hill Marias (3.88) and Kondagaon Murias and Nawagharia Gonds (3.08). There is little difference between other groups and if there is, it is at best doubtful. The Bhatras have the highest mean Bigonial breadth (100.59) and the Murias of Kondagaon the lowest (94.46). The significance ratio between them is 6.88. There is no significant difference between other groups.

The nasal length cannot be explained in terms of geographical environment, for although the Dhakars (46.00) and Halbas (46.53) possess longer nose, the mean nasal length of the Hill Marias is 46.16. The Kondagaon Murias have the lowest mean nasal length (43.19) and as such there is significant difference between them and the Dhakars (5.62) and Gadabas (3.88), the Halbas (7.06), the Bhatras (5.44) and the Dandami Marias (4.22). If we exclude the Kondagaon Murias, there is not much difference between other groups with regard to this character. In nasal breadth, the highest mean value is given by the Bhatras (39.09), and the Hill Marias, Gadabas and Parjas have a mean nasal breadth between 38 and 39. The nasal index is usually a measure of social status in India and this is corroborated by the values of nasal indices obtained in Bastar. The Dhakars have the lowest mean nasal index (77.91) and the Halbas follow the Dhakars closely with (79.28). The Kondagaon Murias have the highest nasal index (85.52), the Gadabas (84.37), the Dandami Marias (83.62) and the Hill Marias (83.03). The Bhatras and Parjas possess a high mean nasal index, the former 85.14, the

latter 83.79 which are higher than that of the Hill Marias. Thus except the Kondagaon Murias, there appear to be two strains one represented by the Dhakars and Halbas and the other by the Bhatras and Parjas and the rest of the groups are intermediate in type between these two extremes. It must be noted here that the difference between the various cultural groups is not such as to warrant the suggestion that they belong to different ethnic stocks, particularly this is true of tribal groups, but it shows that although the Dhakars and Halbas have retained their social status they have considerably mixed with other groups which fact has certainly influenced the nasal indices of other groups.

The auricular height and nasal height do not give any new information as there is no striking significance ratios between the groups. In orbito-nasal breadth, the Hill Marias differ significantly from the Murias and Dandami Marias, the Bhatras from Kondagaon Murias, the Parjas from the Kondagaon Murias. The Dhakars do not differ from any of the other groups in this character except from the Bhatras (3.22). In orbito-nasal arc the Bhatras have significant ratio with Kondagaon Murias (5.53) and Narayanpur Murias (5.04) while the ratio between Kondagaon Murias and Parjas, Nawagharia Gonds, Hill Marias is also significant.

In total facial length, there is no striking difference between the groups and the only significant difference exists between the Hill Marias and Kondagaon Murias (3.19) also between Hill Marias and Nawagharia Gonds (3.93). The Bhatras have a significant ratio of (3.29) with Nawagharia Gonds. In upper facial length significant difference is found between Dandami Marias and Dhakars (3.47), Dandami Marias and Kondagaon Murias (3.11), between Dhakars and Bhatras (3.19). The other ratios are insignificant or doubtful.

We have already interpreted the significant differences found to exist between the various groups of Bastar on the basis of the study of the dispersal values of the significant ratios. It appears that the various groups measured do not differ much from one another. Except between the Kondagaon Murias and Bhatras (mean significant ratio 3.88), between the former and the Parjas (Mean S.R. 3.23) and also the Hill Marias (M.S.R. 3.02) there is no striking significant ratios between other groups as will appear from the calculated mean significant ratios in the Tables. Most of the mean significant ratios fall below unity as for example between Halbas and Nawagharia Gonds (0.69), Halbas and Parjas (0.72), Parjas and Hill Marias (0.67), Narayanpur Murias and Kondagaon Murias (0.77), Narayanpur Murias and Nawagharia Gonds (0.94), Parjas and Dandami Marias (0.91), Gadabas and Dhakars (0.88), Halbas and Dhakars (0.54), Gadabas and Narayanpur Murias (0.71) and Gadabas and Nawagharia Gonds (0.14), Gadabas and Parjas (0.77). About 13 of the

relations show mean significant ratios between 1 and 2 and only 4 show mean significant ratios between 2 and 3.

The Table below will give an idea about the respective distance of the cultural groups with respect to the indicial characters (cephalic and nasal).

Name of the group.	Cephalic index.	Name of the group.	Nasal index.	Order of social precedence in the state.
Kondagaon		Kondagaon		
Murias	73.04	Murias	85.52	(1) Hill Marias.
Hill Marias	74.20	Bhatras ..	85.14	(2) D a n d a m i Marias.
Gadabas ..	74.27	Gadabas ..	84.37	(3) Gadabas.
Narayanpur				
Murias	74.42	Parjas ..	83.79	(4) M u r i a s Kondagaon.
Muria (Fem.)	74.88			
Dhakars ..	75.17	Dandami Marias	83.62	(5) Murias Na- rayanpur.
Nawa. Gonds	75.31	Hill Marias ..	83.03	(6) Parjas.
Bhatras ..	75.33	Nawagharia	81.49	(7) Bhatras.
		Gonds		
Dandami Marias	75.96	Narayanpur	81.12	
		Murias		
		Muria Females	80.96	
Halbas ..	77.75	Halbas ..	79.28	(8) Halbas.
Parjas ..	77.79	Dhakars ..	77.91	(9) Dhakars.

The Nawagharia Gonds of C.P. should be placed between Bhatras and Halbas in the Table above. The Hill Marias, Murias both of Kondagaon and Narayanpur and Gadabas, all are dolichocephals, the Bhatras, Parjas, Halbas, Dhakars, Nawagharia Gonds and Dandami Marias are mesocephalous. The Halbas and Dhakars have nasal indices of 79.28 and 77.91 respectively, all the rest have their nasal indices between 80 and 86. It appears that although the tribal groups are not found to follow the order of social precedence with respect to the indicial characters it is interesting that the Halbas and Dhakars, the two high castes in Bastar have maintained their social distance from the tribal groups. The intra-tribal social distance is more or less artificial as it depends on the proximity of the tribal groups to the castes. The economic interdependence of the tribal groups and higher castes have brought some of these tribes into close association with the castes which have provided them social status and a place in the social hierarchy of the state. Though the higher castes have maintained their social precedence, their physical type has undergone considerable change and to-day thin partition divides them from the tribal stock.

So far as the indefinite characters are concerned, the differences between the various groups in Bastar are not easily discernible. The Parjas are the tallest among these, their complexion varies from brown to dark, the face is slightly prognathous and the chin receding but no traces of epicanthic fold were found in any individual. Compared to other cultural groups, the Parjas appear to have some distinct ethnic traits, with the Bhatras as the closest of their kins. The Bhatras however do not show much of prognathism or receding chin and on the whole they conform to the general type in Bastar, though individuals among the Bhatras bear more close similarity to the Parjas than to Dhakars or Marias. The Bhatras do not recognize the Parjas as their kith and kin though the latter would unhesitatingly affirm their close relationship with the former. The Hill Marias are tall, handsome and graceful. Some possess a light brown complexion and few of them would answer to the aboriginal description. The hair is plentiful on the face and scalp, the limbs are well proportioned and give the idea of great power. The Dandami Marias have a variety of features in them and often it is difficult to tell a Dandami Maria from a Halba or even a Dhakar but they certainly differ from the Parjas, the chin is well developed, the nose prominent and forehead vertical. The Maria women, Hill as well as Dandami, have finer features than those possessed by the women among the Parjas. The Murias of Kondagaon as well as of Narayanpur resemble the Marias but the latter are more akin to the Hill Marias than the Murias of Kondagaon. There is hardly much to choose between the women of the two sections of the Murias and it is possible that settled life among the Murias of Narayanpur has something to do with their general appearance.

The Gadabas are a problem. In appearance they do not differ from the Murias. They have a dark complexion but brown skins are pretty frequently found among them. The eyes are large and expressive, the nose thin and well developed but the hair is less plentiful than among the Marias or Dandamis, the cheek bones are a little more prominent among them than among the Murias or Marias. Whatever be their origin, to-day they have lost their ethnic identity and are not different from the Murias from whom they would freely take food and water.

The Halbas and Dhakars are closely related, though the Dhakars as a caste possess better features. The complexion varies from tawny brown to pale brown and persons with fair complexion are not rare among them. The forehead is high and vertical, the nose prominent though not very high, the eyes are dark brown and black. On the whole their features are more regular than those of any other group and compare favourably with those of the Kshatriyas in other parts of Chattisgarh. But frequently one meets with Dhakars whose features do not

affiliate them with the description given above and it is perhaps true that nowhere the effects of intermixture are more evident than in Bastar which may be called the melting pot of races.

The results of 16 measurements on 564 persons indicate that there is a correspondence between social types and ethnic types. On the whole the lower the cultural stage, the longer the head and flatter the nose. The Dhakars and Halbas represent the higher castes in Bastar and they possess lower nasal indices than other groups. The difference between the groups are not very wide and that is why the mean significance ratios between them are not at all striking. They may all be taken to represent one ethnic type and with the exception of Dhakars all the other groups answer to a common racial type. This may be called the Gond type as comparison of the racial traits of Bastar Gonds with those of the Nawagharia Gonds does not indicate any great divergence of types. Whether we call this type Gondide or Proto-Mediterranean or Mediterranean the historic Gonds did not belong to the Australoid type we find in the aboriginal population of India, in Chota-Nagpur and elsewhere. The suggestion that the Maria Gonds may belong to the Naga stock which is inferred on the basis of alleged similarity of culture between them and the possession of Mongoloid features by individual Marias is interesting no doubt but extremely hypothetical.

Two alternative explanations suggest themselves. Either the ethnic types that have contributed to racial miscegenation in Bastar are not widely divergent, so that the Bastar type though a mixed one answers to the descriptions both of the Dhakars and Gonds, or the Dhakars and Halbas who represent the higher castes in the State have mixed to produce an intermediate type characterized by mesorhine noses and mesocephalic heads, though originally they were brachycephals and mesorhine. This latter explanation is plausible in view of recent knowledge about the social and biological effects of race crossing. 'As far as can be ascertained', writes J. C. Trevor, 'from the best evidence available, the cross results in a nearly perfect blending of average values, determined by the proportions in which the parent populations have mixed.' These results are not perhaps genetically surprising if the parent populations are themselves highly heterozygous and variable. The variabilities of the crossed series therefore are not necessarily greater than those of the parent populations and if we pin our faith on the variability alone, to determine the purity and homogeneity of the samples, it will give us results which cannot very well be substantiated. On the basis of the arguments given above it is no wonder that the Dhakars and Halbas represent an intermediate type between the tribal type in Bastar and a type which may be ancestors to the Dhakar and Halba type characterized by brachycephaly, medium stature with flattened occiput but having also high

head, short orthognathous face, long and often pitched nose, light brown complexion, dark straight hair and dark brown eye colour, a type corresponding to Dr. Guha's B element in the Indian population (Census of India, Vol. I, Pt. III, page lxii).

An interesting example of the formation of cultural groups, the process by which tribes transform themselves into castes is found in Bastar. Grigson in his book on the Maria Gonds of Bastar has referred to this cultural transition. He writes that a large number of persons returned as members of the Hindu functional castes, the graziers, potters, fishermen, weavers, blacksmiths and others, are in reality members of the primitive tribes speaking their language and only differentiated from them by their occupation. There is nothing in their appearance to distinguish these persons from other aborigines of the area, they follow their tribal religions whether enumerated as such or as Hindus.

I measured a group of 35 Kurukhs of Chitrakot who are fishermen and live mostly by fishing in the Indravati river. A comparison of differences of means and standard deviations in terms of their standard errors of two series of measurements on the Kurukhs and Hill Marias indicate very little divergence between the two samples. The constants for the means of 16 absolute characters when compared give all values less than 2 except in the case of one nasal measurement, viz. nasal height which is 2.03. The nasal height is a delicate measurement and such small difference in value may be ignored. In standard deviations also except for the nasal breadth (2.26) and nasal height (2.90) all the other characters do not show any significant difference. Considering all these characters it appears that for all practical purposes the two samples (Kurukhs and Hill Marias) may be taken to represent the same population. The cephalic index of the Hill Marias is 74.20, nasal index 85.52 and stature 162.06 while corresponding figures for the Kurukhs are 74.50, 84.20 and 161.54. The result, however, should be regarded as extremely significant as such comparisons may lead to the identity of tribal groups with castes thereby explaining the transition of tribes into castes.

TABLE 1.

Comparative Indices for series of Bastar State, Males and Females.

	Cephalic Index.	Nasal Index.	Orbito- Nasal Index.	Total Facial Index.
Murias of Kondagaon ..	73.04	85.52	110.19	89.98
Murias of Narayanpur	74.42	81.12	109.70	90.21
Gadabas	74.27	84.37	110.20	89.09
Hill Marias ..	74.20	83.03	109.60	90.09
Dhakars	75.17	77.91	109.91	89.83
Halbas	77.75	79.28	110.38	90.58
Parjas	77.77	83.79	110.00	90.04
Bhatras	75.33	85.14	111.55	89.61
Nawagharia Gonds ..	75.31	81.49	111.89	87.83
Dandami Marias ..	75.96	83.62	110.30	89.95
Muria Females ..	74.88	80.96	108.32	88.59

TABLE 2.
*Mean Age and Standard Deviation (with Standard Errors) for groups of Bastar Males, one group of females
 and one of C.P. Gonds.**

	(54) Bhatras.	(50) Dan- dami Marias.	(50) Dhakars. Halba.	(51) Hill Maria.	(51) Muria Nara- yanpur.	(52) Muria Konda- gaon.	(50) Nawa- gharia Gonds.	(50) Parjas. Females.	(52) Muria Females.	(52) Gadaba.
Mean Age ..	36.70 ± 1.13	29.46 ± 1.24	35.66 ± 1.28	37.92 ± 1.19	31.33 ± 1.12	29.33 ± 1.23	25.10 ± 0.73	33.20 ± 1.61	30.38 ± 1.25	35.42 ± 1.04
Standard Deviation ..	8.34 ± 0.80	8.77 ± 0.88	9.06 ± 0.91	8.49 ± 0.84	7.98 ± 0.79	8.87 ± 0.87	5.24 ± 0.51	11.40 ± 1.14	8.85 ± 0.88	7.49 ± 0.73

* In all cases the ages were estimated by the observer with the assistance of a few elders of the villages concerned.

TABLE 3.
Comparative Means for series of Bastar State Males (with Standard Errors), one group of C.P. Gonds
and one female group (from Bastar).

	Dandami Marias (50) ♂	Bhatras (54) ♂	Dhakars (50) ♂	Gadaba (52) ♂	Halba (51) ♂	Hill Marias (51) ♂	Muria Nara- yanpur (52) ♂	Muria Konda- gaon (52) ♂	Gonds Nawa- gharia (50) ♂	Parjias (50) ♂	Muria Females (52) ♀
Stature ..	159.48 ± 0.86	160.91 ± 0.79	158.17 ± 0.83	158.04 ± 0.81	158.09 ± 0.72	162.06 ± 0.69	160.61 ± 0.74	157.79 ± 0.68	158.74 ± 0.74	162.32 ± 0.88	147.93 ± 0.58
Span ..	172.70 ± 1.09	173.63 ± 0.84	168.28 ± 1.09	169.44 ± 0.79	170.84 ± 0.93	173.76 ± 0.91	171.54 ± 1.03	169.08 ± 0.83	171.76 ± 0.94	174.22 ± 1.20	..
Head Length ..	180.50 ± 1.00	184.43 ± 0.75	182.26 ± 0.83	182.77 ± 0.80	179.82 ± 1.04	184.57 ± 0.73	182.37 ± 0.72	183.58 ± 0.85	182.42 ± 0.74	180.58 ± 0.95	176.46 ± 0.82
Head Breadth ..	137.12 ± 0.73	138.94 ± 0.65	137.02 ± 0.64	135.75 ± 0.76	139.82 ± 0.76	136.96 ± 0.56	135.73 ± 0.52	134.10 ± 0.30	137.38 ± 0.61	140.48 ± 0.71	131.44 ± 0.57
Auricular Height ..	12.80 ± 0.08	13.0 ± 0.07	12.67 ± 0.08	12.89 ± 0.08	12.93 ± 0.10	13.02 ± 0.09	13.03 ± 0.07	12.79 ± 0.10	12.81 ± 0.08	13.09 ± 0.07	12.67 ± 0.09
Nasal Length ..	45.30 ± 0.42	45.91 ± 0.40	46.00 ± 0.44	45.13 ± 0.36	46.53 ± 0.55	46.16 ± 0.34	45.46 ± 0.42	43.19 ± 0.40	45.72 ± 0.41	45.54 ± 0.53	42.98 ± 0.45
Nasal Breadth ..	37.88 ± 0.34	39.09 ± 0.34	35.84 ± 0.34	38.08 ± 0.34	36.88 ± 0.46	38.33 ± 0.35	36.98 ± 0.32	36.94 ± 0.28	37.26 ± 0.34	38.16 ± 0.39	34.80 ± 0.32
Nasal Height ..	20.56 ± 0.28	21.96 ± 0.26	19.84 ± 0.22	20.46 ± 0.16	21.12 ± 0.28	20.24 ± 0.29	18.81 ± 0.22	18.96 ± 0.22	20.04 ± 0.24	20.80 ± 0.22	17.77 ± 0.21
Bizygomatic Breadth ..	128.82 ± 0.67	130.41 ± 0.59	128.48 ± 0.60	128.96 ± 0.74	128.61 ± 0.66	130.63 ± 0.71	128.08 ± 0.58	127.13 ± 0.57	129.72 ± 0.61	129.54 ± 0.70	121.13 ± 0.59
Bigonial ..	98.00 ± 0.83	100.59 ± 0.66	96.34 ± 0.67	95.64 ± 0.72	98.75 ± 0.85	96.67 ± 0.79	94.63 ± 0.80	94.46 ± 0.61	94.54 ± 0.75	96.82 ± 0.66	87.69 ± 0.50
Nasion to Crinion ..	55.86 ± 0.77	58.19 ± 0.73	54.12 ± 0.78	59.19 ± 0.74	52.78 ± 0.94	56.43 ± 0.82	56.52 ± 0.86	57.19 ± 0.73	59.22 ± 0.67	61.32 ± 1.13	52.90 ± 0.66
Crinion to Manton ..	166.64 ± 1.05	169.80 ± 0.85	163.86 ± 1.10	167.58 ± 0.93	164.02 ± 1.09	169.47 ± 0.97	168.00 ± 0.95	166.35 ± 1.00	166.04 ± 0.99	170.58 ± 1.55	157.44 ± 1.16
Total Facial Length ..	115.88 ± 0.59	116.87 ± 0.73	115.42 ± 0.77	114.79 ± 0.68	116.49 ± 0.98	117.69 ± 0.80	115.65 ± 0.69	114.40 ± 0.65	113.94 ± 0.52	116.64 ± 0.97	107.31 ± 0.83
Upper Facial Length ..	65.08 ± 0.63	64.63 ± 0.54	62.30 ± 0.49	63.12 ± 0.50	63.31 ± 0.64	63.96 ± 0.56	64.08 ± 0.46	62.12 ± 0.71	63.70 ± 0.47	64.30 ± 0.56	59.67 ± 0.55
Orbito-Nasal Breadth ..	97.46 ± 0.40	98.72 ± 0.44	97.88 ± 0.38	97.75 ± 0.53	97.65 ± 0.54	99.63 ± 0.49	96.92 ± 0.44	95.88 ± 0.48	97.80 ± 0.36	98.72 ± 0.64	94.15 ± 0.31
Orbito-Nasal Arc ..	107.50 ± 0.56	110.13 ± 0.49	107.58 ± 0.62	107.73 ± 0.64	107.80 ± 0.64	109.20 ± 0.67	106.33 ± 0.57	105.65 ± 0.64	109.48 ± 0.43	108.60 ± 0.75	101.98 ± 0.48

TABLE 4.
Comparative Standard Deviations for series of Bastar Males (with Standard Errors), one group of Muria Females of Bastar and one group of Nawaghatia Gonds of C.P.

	(54) ♂ Bhatras	(50) ♂ D. Marias	(50) ♂ Dhakars	(52) ♂ Gadba	(51) ♂ Halba	(51) ♂ Hill Maria	(52) ♂ Muria	(52) ♂ Murias	(50) ♂ Nawa- gharia Gonds	(50) ♂ Parjas	(52) ♀ Muria Females
Stature ..	5.83 ± 0.56	6.09 ± 0.61	5.86 ± 0.59	5.87 ± 0.57	5.15 ± 0.57	4.94 ± 0.49	5.31 ± 0.52	4.88 ± 0.48	5.25 ± 0.52	6.20 ± 0.62	4.19 ± 0.41
Span ..	6.15 ± 0.59	7.70 ± 0.77	7.74 ± 0.77	7.12 ± 0.70	6.62 ± 0.66	6.53 ± 0.65	7.46 ± 0.73	5.95 ± 0.58	6.52 ± 0.66	8.50 ± 0.85	.....
Head											
Length	5.54 ± 0.53	7.05 ± 0.71	5.86 ± 0.59	5.80 ± 0.57	7.43 ± 0.74	5.18 ± 0.51	5.16 ± 0.51	6.13 ± 0.60	5.22 ± 0.52	6.74 ± 0.67	5.94 ± 0.58
Breadth	4.79 ± 0.46	5.16 ± 0.52	4.54 ± 0.45	5.51 ± 0.54	5.43 ± 0.54	3.59 ± 0.36	3.72 ± 0.37	2.16 ± 0.21	4.33 ± 0.43	4.99 ± 0.50	4.11 ± 0.40
Auricular											
Height	0.55 ± 0.05	0.54 ± 0.06	0.53 ± 0.06	0.58 ± 0.06	0.71 ± 0.07	0.68 ± 0.07	0.50 ± 0.05	0.73 ± 0.07	0.54 ± 0.06	0.53 ± 0.05	0.62 ± 0.06
Nasal											
Length	2.95 ± 0.28	2.96 ± 0.30	3.13 ± 0.31	2.58 ± 0.25	3.96 ± 0.39	2.46 ± 0.24	3.01 ± 0.30	2.91 ± 0.29	2.93 ± 0.29	3.76 ± 0.37	3.26 ± 0.32
Nasal											
Length	2.50 ± 0.24	2.42 ± 0.24	2.37 ± 0.24	2.47 ± 0.24	3.28 ± 0.33	2.50 ± 0.25	2.34 ± 0.23	2.05 ± 0.20	2.39 ± 0.24	2.75 ± 0.28	2.29 ± 0.23
Breadth											
Height	1.91 ± 0.18	1.96 ± 0.20	1.58 ± 0.16	1.15 ± 0.11	2.02 ± 0.20	2.06 ± 0.20	1.58 ± 0.16	1.62 ± 0.16	1.71 ± 0.17	1.54 ± 0.16	1.53 ± 0.15
Bizygo.											
Breadth	4.32 ± 0.42	4.73 ± 0.47	4.26 ± 0.42	5.37 ± 0.52	4.70 ± 0.47	5.07 ± 0.50	4.15 ± 0.41	4.08 ± 0.40	4.31 ± 0.43	4.94 ± 0.49	4.29 ± 0.42
Bigonial											
Breadth	4.88 ± 0.47	5.90 ± 0.59	4.74 ± 0.47	5.20 ± 0.51	6.09 ± 0.60	5.63 ± 0.56	5.80 ± 0.57	4.41 ± 0.43	5.34 ± 0.53	4.65 ± 0.47	3.58 ± 0.35
Nasion to											
Crimion	5.40 ± 0.52	5.41 ± 0.54	5.43 ± 0.55	5.36 ± 0.52	6.73 ± 0.66	5.84 ± 0.58	6.22 ± 0.61	5.30 ± 0.52	4.76 ± 0.47	7.98 ± 0.80	4.75 ± 0.47
Crimion to											
Menton	6.26 ± 0.60	7.39 ± 0.74	7.81 ± 0.78	6.71 ± 0.66	7.81 ± 0.77	6.95 ± 0.69	6.84 ± 0.67	7.20 ± 0.71	7.00 ± 0.70	10.93 ± 1.10	8.39 ± 0.82
Total F.											
Length	5.33 ± 0.52	4.15 ± 0.42	5.46 ± 0.54	4.92 ± 0.48	6.97 ± 0.69	5.73 ± 0.57	4.94 ± 0.49	4.68 ± 0.46	3.66 ± 0.37	6.84 ± 0.69	6.01 ± 0.59
Upper F.											
Length	3.98 ± 0.38	4.48 ± 0.45	3.44 ± 0.35	3.46 ± 0.35	4.58 ± 0.45	3.98 ± 0.39	3.33 ± 0.33	5.10 ± 0.50	3.31 ± 0.33	3.99 ± 0.40	3.97 ± 0.39
Orbito-N.											
Breadth	3.26 ± 0.31	2.81 ± 0.28	2.67 ± 0.27	3.85 ± 0.37	3.88 ± 0.38	3.48 ± 0.34	3.20 ± 0.31	3.43 ± 0.34	2.58 ± 0.25	4.56 ± 0.45	2.23 ± 0.23
Orbito-N.											
Are	3.61 ± 0.35	3.96 ± 0.40	4.38 ± 0.44	4.59 ± 0.45	4.59 ± 0.45	4.79 ± 0.47	4.13 ± 0.40	4.64 ± 0.45	3.07 ± 0.30	5.27 ± 0.53	3.48 ± 0.34

Bizygo. = Bizygomatic; F. = Facial; N. = Nasal.

TABLE 5.

*Significance Ratios for the Bastar Series and one group of N.G. Gonds.
(Comparison of Means and Standard Errors.) (Values above two are given.)*

	Bhatras and D. Marias.	Bhatras and Dhakars.	Bhatras and Gadabas.	Bhatras and Halbas.	Bhatras and Hill Marias.	Bhatras and Murias.	Bhatras and K. Murias.	Bhatras and N.G. Gonds.
Stature ..	..	2.40	2.54	2.63	..	..	3.00	2.00
Span ..	..	3.90	3.22	2.23	..	..	3.85	..
A.H. ..	1.88	3.30	..	..	..	..	..	..
H. Length ..	3.14	..	..	3.60	..	..	..	..
H. Breadth ..	..	2.10	3.15	..	2.41	4.00	6.76	..
N. Length ..	..	..	..	..	..	..	5.44	..
N. Breadth ..	2.52	6.77	2.10	4.01	..	4.58	5.37	3.81
N. Height ..	3.69	6.23	5.00	2.21	4.52	9.21	8.90	6.40
Bizygomatic Bg. ..	..	2.32	..	2.25	..	2.91	4.10	..
N.C. ..	4.33	4.61	5.54	3.59	3.84	5.79	6.88	6.61
C.M. ..	2.19	3.84	..	4.54	..	..	..	..
ONB ..	2.34	4.27	..	4.18	..	..	2.64	2.89
ONA ..	2.13	..	..	..	..	2.90	4.36	..
TFL ..	3.55	3.22	2.96	2.87	..	5.04	5.53	..
UFL ..	..	..	2.10	..	..	..	2.54	3.29
Mean Sig. Ratio ..	..	3.19	2.06	..	..	..	2.82	..
	1.61	2.88	1.79	1.88	0.67	2.15	3.88	1.56

	Bhatras and Parjas.	Dandarin Marias and Dhakars.	D. Marias and Gadabas.	D. Marias and Halbas.	D. Marias and Hill Marias.	D. Marias and N. Murias.	D. Marias and K. Murias.	D. Marias and N.G. Gonds.
Stature ..	..	..	..	..	2.34	..	..	..
Span ..	..	2.27	2.27	..	..	..	2.70	..
A.H. ..	..	..	..	..	..	2.30	..	..
H. Length ..	3.18	..	..	..	3.30	..	2.37	..
H. Breadth ..	..	..	..	2.45	..	..	4.31	..
N. Length ..	..	..	..	..	..	..	4.22	..
N. Breadth ..	..	4.25	..	..	..	..	2.13	..
N. Height ..	3.41	2.05	..	..	..	5.00	4.85	..
Bizygomatic Bg. ..	..	..	..	..	..	..	2.01	..
N.C. ..	3.85	..	..	..	..	..	..	..
C.M. ..	4.47	..	3.11	2.52	..	..	..	3.29
ONB ..	..	..	..	..	3.44	..	2.54	..
ONA ..	..	..	..	..	..	2.17	2.78	..
TFL ..	..	..	..	..	..	..	..	2.45
UFL ..	..	3.47	2.42	..	..	..	3.11	..
Mean Sig. Ratio ..	0.93	0.75	0.48	0.31	0.56	0.59	1.93	0.35

*Significance Ratios for the Bastar Series and one group of N.G. Gonds.
(Comparison of Mean* and Standard Errors.) (Values above two are given.)*

Continued from the previous Table.

	D. Marias and Parjas.	Dhakars and Gadabas.	Dhakars and Halbas.	Dhakars and Hill Marias.	Dhakars and N. Murias.	Dhakars and K. Murias.	Dhakars and N.G. Gonds.	Dhakars and Parjas.
Stature ..	2.30	..	..	3.60	2.19	..	..	3.43
Span ..	..	..	..	3.86	2.17	..	2.41	3.73
A.H. ..	2.90	..	2.03	2.91	3.30	..	..	4.20
H. Length ..	..	..	..	2.10	..	..	..	..
H. Breadth ..	3.32	..	2.98	..	..	4.31	..	3.64
N. Length ..	..	..	..	..	..	5.62	..	..
N. Breadth ..	..	4.66	..	5.18	2.85	2.50	2.95	4.64
N. Height ..	..	2.29	3.65	..	3.32	2.83	..	3.09
Bizygomatic Bg. ..	..	..	..	2.38	..	..	..	..
N.C. ..	3.98	4.68	..	2.04	2.06	2.89	5.06	5.38
C.M. ..	2.11	2.58	..	3.81	2.85	..	..	3.53
ONB ..	..	..	..	2.83	..	3.27	..	..
ONA ..	..	..	..	..	..	2.16	2.53	..
TFL ..	..	..	..	2.04	..	..	..	..
UFL ..	..	..	..	2.30	2.65	..	2.05	2.70
Mean Sig. Ratio ..	0.91	0.88	0.54	2.06	1.58	1.60	0.93	2.14

	Gadabas and Halbas.	Gadabas and Hill Marias.	Gadabas and N. Murias.	Gadabas and K. Murias.	Gadabas and N.G. Gonds.	Gadabas and Parjas.	Halbas and Hill Marias.	Halbas and N. Murias.
Stature ..	..	3.79	2.33	..	..	3.56	3.98	2.44
Span ..	..	3.20	..	..	..	3.06	2.24	..
A.H. ..	..	..	..	..	..	..	..	..
H. Length ..	2.25	..	..	..	..	..	3.65	2.06
H. Breadth ..	3.80	..	..	2.03	..	4.54	..	..
N. Length ..	2.15	2.57	..	3.88	..	..	3.17	4.49
N. Breadth ..	2.18	..	2.39	2.58	..	..	2.90	..
N. Height ..	2.06	..	8.25	7.50	..	..	2.20	6.66
Bizygomatic Bg. ..	..	..	..	..	..	..	2.14	..
N.C. ..	2.50	2.36	..	..	..	2.96	2.94	3.76
C.M. ..	2.49	..	..	..	..	..	3.73	2.79
ONB ..	..	2.66	..	2.63	..	..	2.71	..
ONA ..	..	..	..	2.28	2.27	..	..	..
TFL ..	..	2.76	..	..	..	..	..	..
UFL ..	..	..	..	..	..	..	..	..
Mean Sig. Ratio ..	1.08	1.07	0.71	1.30	0.14	0.77	1.75	1.37

Significance Ratios for the Bastar Series and one group of N.G. Gonds.
(Comparison of Means and Standard Errors.) (Values above two are given.)
 Continued from the previous Table.

	Halbas and K. Murias.	Halbas and N.G. Gonds.	Halbas and Parjas.	Hill Murias and N. Murias.	Hill Murias and K. Murias.	Hill Murias and N.G. Gonds.	Hill Murias and Parjas.	N. Murias and K. Murias.
Stature ..	..	..	3.71	..	4.41	3.28	..	2.82
Span ..	..	..	2.22	..	3.80	..	..	..
A.H. ..	..	..	..	..	..	..	..	..
H. Length ..	2.86	2.04	..	2.15	..	2.08	3.35	..
H. Breadth ..	2.12	2.48	..	..	4.93	..	4.04	2.71
N. Length ..	7.06	..	..	..	5.94	..	..	4.54
N. Breadth ..	..	..	2.13	2.96	3.15	2.22	..	..
N. Height ..	6.17	3.06	..	4.76	3.35	..	..	..
Bizygomatic Bg. ..	2.12	..	..	2.83	3.88	..	..	..
N.C. ..	5.60	5.80	..	..	..	2.65	3.49	..
C.M. ..	..	..	3.47	..	2.24	2.49	..	..
ONB ..	2.45	..	..	4.10	5.43	3.00	..	..
ONA ..	2.38	2.18	..	3.26	3.83	..	..	..
TFL ..	..	2.29	..	..	3.19	3.93	..	..
UFL ..	..	..	..	..	2.02	..	..	2.30
Mean Sig. Ratio ..	1.91	0.69	0.72	1.25	3.02	1.22	0.67	0.77

	N. Murias and N.G. Gonds.	N. Murias and Parjas.	K. Murias and N.G. Gonds.	K. Murias and Parjas.	N.G. Gonds and Parjas.
Stature ..	..	..	..	4.08	3.11
Span ..	..	..	2.14	3.29	..
A.H. ..	2.07	..	..	2.45	2.64
H. Length ..	..	..	..	2.36	..
H. Breadth ..	2.06	5.39	5.46	8.28	3.33
N. Length ..	..	..	5.06	3.91	..
N. Breadth ..	..	2.36	..	2.54	..
N. Height ..	4.10	..	3.37	5.93	2.39
Bizygomatic Bg. ..	..	2.12	3.08	2.67	..
N.C. ..	2.47	3.38	2.05	2.96	2.30
C.M. ..	..	..	..	3.08	..
ONB ..	..	2.33	3.20	2.29	2.46
ONA ..	4.43	2.41	4.84	3.55	..
TFL ..	..	..	..	3.00	..
UFL ..	..	..	..	..	2.45
Mean Sig. Ratio ..	0.94	1.12	1.82	2.42	1.16



FIG. 1. Nawagharia Gond.

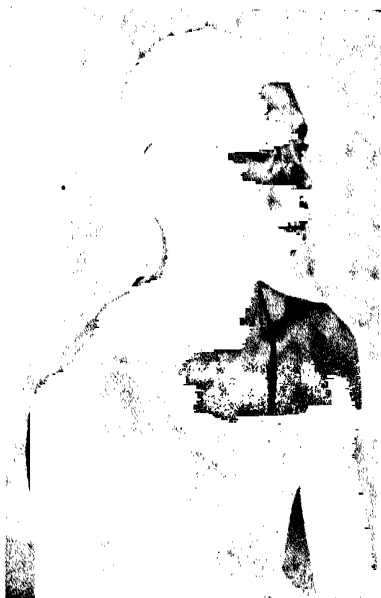


FIG. 2. Profile of Fig. 1.



FIG. 3. Muria, Kondagaon, Bastar, C.P.



FIG. 4. Profile of Fig. 3.

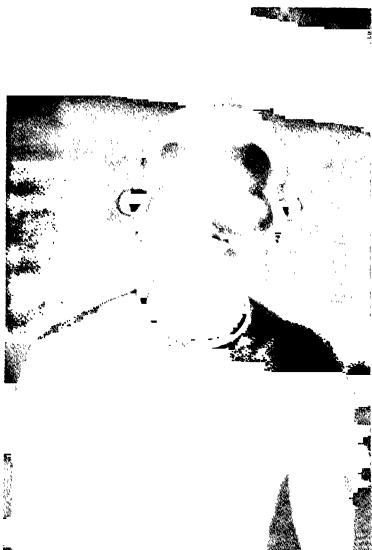


FIG. 1. Dandami Maria.

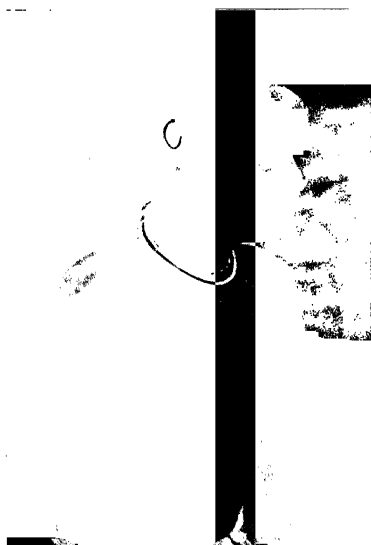


FIG. 2. Profile of Fig. 1.



FIG. 3. Hill Maria.

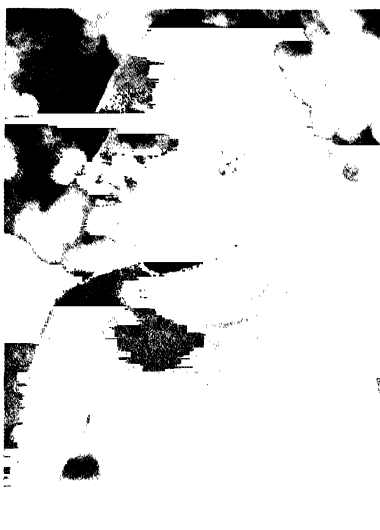


FIG. 4. Profile of Fig. 3.



FIG. 1. Dhakar.



FIG. 2. Profile of Fig. 1.



FIG. 3. Gadaba.



FIG. 4. Profile of Fig. 3.



FIG. 1. Muria Youth, Narayanpur.



FIG. 2. Parja, Bastar.

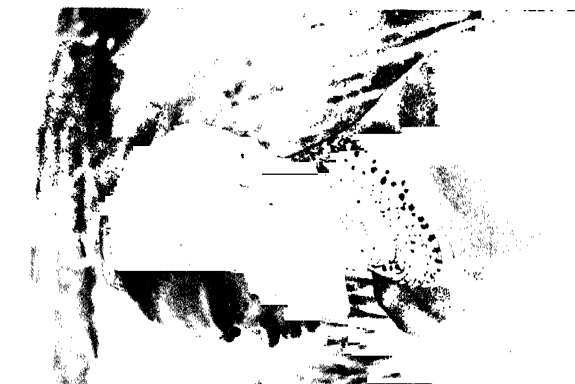


FIG. 3. Profile of Fig. 2.

Notes on *Cayratia* and *Tetrastigma*.

By FRANKLIN P. METCALF.

(Communicated by Dr. K. P. Biswas.)

Recently in connection with the preparation of my 'Flora of Fukien', with notes on South-eastern China, I was unable to settle definitely the status of the two specimens collected in Hainan in 1921 and 1922 by Professor F. A. McClure. These had variously been interpreted as *Columella Wrayi* (King), Merrill, or as *Cayratia papillata* (Hance), Merrill and Chun, which last was considered by Merrill and Chun as possibly being the same as *Cayratia Wrayi* (King), Gagnepain.

Through the kindness of Dr. K. P. Biswas, Superintendent of the Royal Botanical Gardens, Sibpur, Calcutta, India, I have been fortunate in obtaining two photographs of two different sheets of *Scortechini* 426 from Perak, as well as a drawing, and 2 or 3 fruits with seeds, this representing one of the syntypes listed by King when he described *Vitis Wrayi*. At the Arnold Arboretum I have a photograph of the type of Hance's species *Vitis papillata* Hance (= *Cayratia papillata*, Merrill and Chun), namely, *Bullock, herb. Hance* 20297 from Hoi hau, Hainan, and a specimen collected from Hung Mo Shan, Hainan, collected by *Tsang, Tang* and *Fung, LU* 17595, which agrees very well with the photograph of the type of *Vitis papillata* Hance.

A comparison of the available photographs, drawings, and merotype show that the species of King, originally described as *Vitis Wrayi* and that of Hance, originally described as *Vitis papillata*, are the same and that they both represent a species of *Cayratia* and not *Tetrastigma*.

Gagnepain, Merrill and Chun, and more recently Biswas (in litt.) consider this to be a *Cayratia*, not a *Tetrastigma*, though Craib has placed his Siam material under *Tetrastigma*.

The early material from Hainan collected by McClure is something entirely different; it is a species of *Tetrastigma*, apparently undescribed, and is here proposed as a new species.

1. *Cayratia papillata* (Hance) Merrill and Chun, in *Sunyat-senia*, 5, 118 (1940).

Vitis papillata Hance, *Journ. Bot.*, 16, 226 (1878).

Vitis Wrayi King, *Journ. Asiat. Soc. Bengal*, 64(2), 8, 394 (Mat. Fl. Malay Pen. 680) (1896); Ridley Fl. Malay Pen., 475 (1922).

Cayratia Wrayi Gagnepain, *Not. Syst.*, 1, 346 (1911), and in *Lecomte Fl. Gén. Indo-Chine*, 1, 978 (1912).

Tetrastigma Wrayi Craib, *Fl. Siam. Enum.*, 1, 314 (1926).

This species as now represented extends from Perak to Siam [*Mrs. Collins* 649 and 699, *ex* Craib], to Indo-China [*Pierre* 4432, *ex* Gagnepain], and to Hainan [*Bullock*, *herb. Hance* 20297, type, and *LU* 17595 (*Tsang, Tang and Fung*), *ex* Merrill and Chun]. No specimens from Indo-China or Siam are available to the writer, but Gagnepain's treatment of this group is very critical, so his crediting of this species to Indo-China is probably correct. I am not so sure of Craib's record for Siam, as he recognizes both *Cayratia* and *Tetrastigma* and still has made the new combination *Tetrastigma Wrayi* (King), Craib, combining the Perak and Siam (Prachinburi and Nawng Kaw) material. His Flora, however, was done at Kew, where he surely had type material of King's species for comparison.

2. *Tetrastigma Biswasiana* Metcalf spec. nov.

Columella Wrayi (King) Merrill, *Ling. Sci. Journ.*, **5**, 122 (1927), *non* *Cayratia Wrayi* (King) Gagnepain, *excl. syns. cit. et quoad spec. cit. e* Hainan.

Tetrastigma Henryi Merrill and Chun, *Sunyatsenia*, **2**, 39 (1934), *non* Gagnepain.

Frutex scandens, glaber, ramulis ultimis longitudinaliter sulcatis 1.5 mm. diametro, ramis teretibus, internodis 6 ad 8 cm. longis; foliis trifoliatis, petiolo 3.5–6 cm. rare ad 8 cm. longo; foliolis lateralibus oblique oblongo-lanceolatis, apice abrupte acutis vel acuminatis, ad basim rotundatis, petiolo circiter 8 mm. longo, foliis terminalibus ellipticis, apice abrupte acutis vel acuminatis, ad basim cuneatis, utrinque glabris, leviter reticulatis, viridibus vel olivaceis, venis primariis 7–12 conspicuis, margine subintegerrimis vel distanter et minute denticulatis, glanduloso-apiculatis; petiolulo circiter 30 mm. longo; inflorescentiis axillaribus, pedunculatis, circiter 4–6 cm. longis et 6 cm. rare 10 cm. latis, cymoso-paniculatis, plurifloris, parce et minute puberulentibus; calycibus minutis lobis 4, late triangularibus; petalis glabris, ovatis, 1.2 mm. longis latisque, apice cucullatis dorso corniculatis, corniculo terete, uncinato, obtuso; staminibus minutis; disco undulato vel crenulato; stigmatibus 4-lobis; fructibus ellipsoideis nigris, 5–10 mm. longis et 3–5 mm. latis, pedicello 5 mm. longo parce et minute pubescente.

Hainan: Hong Ma Ts'un, *CCC. 8308* (*McClure*), type, Dec. 3, 1921, (*CCC. and AA.*). Additional numbers not available now at the Arnold Arboretum and included on the same printed labels, namely, *CCC. 8276, 9194, 9413, 9544*, and also cited by Merrill (l.c.) in his enumeration of Hainan plants, probably represent the same species, but should be seen and verified, as typical *Cayratia papillata* (Hance), Merrill and Chun, has also been collected from one of the same sublocalities, Hung Mo Shan (Five Finger Mountain) in Hainan. The following numbers from Hainan, all originally distributed as *T. Henryi*, Gagnepain, also belong here, namely: Chang-kiang, *S. K. Lau* 1399, Poting,

F. C. How 71657, type of flower, 71766 and *Ko* 52206, and without detailed local locality, *C. Wang* 36226 and *S. P. Liang* 55220. The leaflets in *Ko* 52206 and *How* 71657 are somewhat undulate.

This species in general appearance suggests *Cayratia papillata* (Hance) Merrill and Chun [*Cayratia Wrayi* (King) Gagnepain] but in addition to the fact that this is a *Tetrastigma* and not a *Cayratia*, it can be separated by the broader, more oblong-elliptic leaves, with abruptly acute to acuminate, not gradually acuminate apices, more numerous veins, less prominently denticulate undulate margins, and elliptical, not subglobose, fruits. In *Tetrastigma* its nearest affinity is *Tetrastigma Henryi* Gagnepain, which has more prominently undulate-serrate margins to the 3-4 foliolate to 5 foliate, pedate leaves, and by its pubescent, not glabrous, petals and puberulent, not subglabrous, pedicels of the fruit.

This species is named in honour of Dr. K. P. Biswas, Superintendent of the Royal Botanical Gardens, Calcutta, whose co-operation and courtesy have made the preparation of this paper possible.

ARNOLD ARBORETUM,

Harvard University,

September 4, 1941.

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FOR 1940

VOLUME VII

1941

PROCEEDINGS OF THE ANNUAL MEETING, 1941

FEBRUARY

The Annual Meeting of the Royal Asiatic Society of Bengal was held on Monday, the 3rd February, 1941, at 5 P.M.

PRESENT

THE HON'BLE MR. JUSTICE JOHN LORT-WILLIAMS, Kt., K.C.,
President, in the Chair.

Members :

Agharkar, Dr. S. P.	Ghose, Dr. S. K.
Anderson, Mr. J.	Ghosh, Mr. J.
Asadullah, Khan Bahadur K. M.	Ghosh, Mr. P. K.
Auden, Dr. J. B.	Ghuznavi, Mr. I. S. K.
Biswas, Dr. K. P.	Griffiths, Dr. W. G.
Bose, Mr. S. M.	Guha, Dr. B. S.
Brahmachari, Dr. P. N.	Haq, Prof. M. M.
Brahmachari, Mr. S. C.	Hobbs, Major H.
Brown, Mr. Percy	Hora, Dr. S. L.
Bruce, Lieut. A. E. R.	Hosain, Dr. M. H.
Chakladar, Prof. H. C.	Huda, Mr. S. S.
Chakravarti, Prof. C.	Isch-Wall, Lieut. C.
Chatterjee, Mr. R. P.	Macfarlane, Dr. E. W. E.
Chatterji, Dr. S. K.	Majumdar, Mr. J. M.
Chaudhuri, Dr. Roma	Mallya, Lt.-Col. B. G.
Chopra, Dr. B. N.	Mazumdar, Mr. D. L.
Chopra, Bt.-Col. Sir R. N.	Meyer, Miss S.
Cleghorn, Miss M. L.	Mukherjee, Dr. J. N.
Culshaw, Rev. W. J.	Nag, Dr. K.
Datta, Mr. J. N.	Pasricha, Major C. L.
De, Mr. J. C.	Prashad, Dr. Bains
De, Mr. K. C.	Rahman, Prof. S. K.
Dutt, Mr. M. N.	Ramachandran, Mr. T. N.
Edgley, Hon'ble Mr. Justice N. G. A.	Ray Chaudhuri, Mr. H. C.
Ezra, Sir David	Saha, Dr. M. N.
Fawcett, Mr. L. R.	Singhi, Mr. Bahadur Singh
Ghatak, Prof. J. C.	Vedantatirtha, Mr. V.
Ghose, Dr. P. N.	West, Mr. W. D.

Visitors :

Akbar, Mr. Syed E.	Brown, Mrs. Percy
Banerji, Mr. G. N.	Chakravarti, Mr. P. K.
Banerji, Mr. P. N.	Chatterjee, Dr. B. K.
Bhattacharya, Mr. U. C.	Chatterjee, Mr. B. N.
Bhose, Mr. S.	Chatterjee, Mr. H. C.
Bingham, Mr. G. E.	Clark, Mr. T. W.
Bingham, Mrs.	Cleghorn, Miss O.
Biswas, Mr. P. C.	Datta, Mr. J. M.
Bose, Dr. S. R.	Das-Gupta, Mr. J.
Bose, Miss Indira	Das-Gupta, Miss Gayatri

David, Mrs. E.
 Devi, Miss Santa
 Devi, Miss Seeta
 Ezra, Lady
 Genge, Mr. G. R.
 Ghosh, Mr. D. N.
 Ghosh, Mr. R. C.
 Ghosh, Mr. S. C.
 Guha, Mr. Bhupendra S.
 Guha, Mrs. Uma
 Guha, Mr. S. S.
 Guthrie, Miss A.
 Guthrie, Mr. H.
 Hafiz, Mr. Q. A.
 Hosain, Mr. J. W.
 Huang, Mr. C. C.
 Jacob, Dr. K.
 Jacob, Mrs.
 Krishnan, Dr. K. S.
 Kumar, Mr. Gurudas
 Maitra, Miss
 Maitra, Mr. S. N.
 Majumdar, Mr. G. P.

Mitra, Mr. A. K.
 Mitra, Mr. N.
 Mitra, Mr. P.
 Mitra, Mr. U. C.
 Mitter, Mr. B. C.
 Mukherjee, Mr. S. K.
 Multani, Mr. P. S.
 Narayanan, Mr. T. G.
 Okazaki, Mr. K.
 Pandya, Dr. A. M.
 Pandya, Mrs.
 Paul, Mr. G. C.
 Rao, Dr. H. S.
 Ray, Mrs. I. R.
 Ray, Mr. S. N.
 Roonwal, Mr. M. L.
 Sen, Mr. A. C.
 Sen, Mr. H. C.
 Sen, Miss Usharani
 Sinha, Mr. D. V.
 Sinha, Mr. R. K.
 Thakur, Mr. S. P.
 and many others.

The President in declaring the Annual Meeting open said:—

‘LADIES AND GENTLEMEN,

Voting papers for the election of the new Council will be distributed to all the Ordinary Members present. I request the Ordinary Members present to deliver their votes in the collection boxes which will be sent round to them.’

After the distribution of the voting papers the President said:—

‘LADIES AND GENTLEMEN,

Have all votes been delivered? If yes, I call upon Mr. Hobbs and Dr. S. P. Agharkar to act as scrutineers.

I now call upon the General Secretary to present the Annual Report for 1940.’

The Annual Report was then presented (vide page 29).

After the presentation of the Annual Report, the President delivered the Annual Address (vide page 9).

After the reading of the Annual Address, the General Secretary transmitted to the President the result of the Council election. The President thereupon announced the results of the Council election (vide page 14).

The President for 1941 then briefly thanked the Society for his re-election, as follows:—

‘LADIES AND GENTLEMEN,

I have to thank you most heartily for the honour you have done me by re-electing me as your President for the ensuing year.

I will add no words other than those necessary to say that it will be my strenuous endeavour, during the new year, to serve the Society so that its usefulness, its renown and its influence may grow, and so that the cause of learning in this land and beyond its borders may be truly promoted.'

Then the President made the following announcements:—

'On the date prescribed by the regulations for the issue of nomination papers for the election of new Fellows for the year, there were no vacancies on the role, consequently no election of Fellows has taken place.'

'I have now to announce that no papers have been received in competition for the Elliott Prize for scientific research for the year 1940 which was for Mathematics.'

'The prize for 1941 will be for work in Chemistry regarding which a detailed announcement has been published in the *Calcutta, Bihar, and Orissa Gazettes*.'

'My next announcement regards the Sir William Jones Memorial Medal. This medal is awarded triennially for conspicuously important Asiatic Researches with reference alternately to (1) Science, including Medicine, and (2) Philosophy, Literature and History.'

'This year the medal is for Science and is awarded to:—

Sir Prafulla Chandra Ray, Kt., C.I.E., D.Sc., F.R.A.S.B.,
F.N.I.'

'In declaring the Annual Meeting dissolved, I now invite the members present to continue in Ordinary Monthly Meeting of the Society for the election of Members and transaction of business, and visitors to inspect the exhibits shown at the other end of the hall.'

(For the descriptive list of exhibits, see page 15.)

ANNUAL ADDRESS, 1940-41.

For some time past it has been the custom for your President to address to you at the Annual General Meeting a learned discourse upon some scientific or literary subject. Periodically this custom has not been observed, the reason being that a more urgent necessity of the time was the consideration of some fundamental question touching the well-being of the Society.

Such urgency came to a head two years ago, when uneasiness which had been growing for some time, was tentatively reflected in a most interesting address by your then President, Sir David Ezra. I believe that those reflections were approved by Mr. Johan van Manen, then General Secretary, whose experience of the Society was probably longer than that of most of us, and though I had never discussed the questions raised with either of them, I was surprised to find how singularly they coincided with views which I had formed independently. This coincidence confirmed me in my belief in the urgent necessity for a thorough enquiry into the aims and organization of the Society and, so to say, a general stock-taking.

For a very good reason, the dangers then suggested were not fully appreciated, those fundamental questions were left unanswered, and have not yet received the attention and consideration which they undoubtedly deserve, and which in my opinion they must have if this ancient Society is to retain its vitality and survive. The reason was that they were overshadowed by a more urgent problem, though incidentally one which was much easier to solve, namely, the apparent need for a thorough overhaul of what I may call the machinery of the Society, its administration and organization. It is unnecessary for me to recall the serious defects which were discovered after careful and thorough investigation, nor to repeat the story of the reforms which were undertaken and which are rapidly approaching completion, as is shown in detail in the Annual Report.

But organization, like patriotism, is not enough. The time has now come to face the more difficult problem of the future of the Society from the intellectual standpoint. I have not much faith in optimists, and find a thoroughgoing pessimist much more stimulating for thought. And if it be considered pessimistic to face difficulties frankly, then I must plead guilty to being a thorough pessimist. Spengler has described optimism as a form of cowardice, and in a matter so important for the well-being of this Society of which I am proud to be President, I am not in the least ashamed to repeat some of the remarks made two years ago by my predecessor, and in language upon which

I cannot hope to improve. My only regret is that he stole my thunder, and anticipated some of my arguments. Nevertheless, he has left to me the more important task of trying to suggest remedies which he frankly admitted that he could not attempt within the limited scope of his address. To avoid the unnecessary and useless task of translating his reflections into my own language, I will summarize them as follows.

The Society was born at a time when specialists and professional scholars worked with men of general culture in furthering 'the progress of science and literature'. The beneficent results of this co-operation were, a wider support for the Society both financial and social, work more readable, intelligible and acceptable to men and women of general culture, and the avoidance of over-specialization and technicality. World-tendency, however, is increasingly towards segregation and division into specialist groups and the creation of a multitude of societies and institutions, which in India are sometimes neither affluent, flourishing nor powerful, and consequently soon suffer from diminished support, and from Government's increasing difficulty in providing help for so many. Our Society has assisted in the birth of many such scholarly bodies and institutions, and this has caused necessarily some decrease in the support available for the mother Society.

In these circumstances our Society has to consider whether it has any longer any function to perform. In the opinion of my predecessor and emphatically in mine also, a Society such as ours is more urgently needed than ever before. It cannot be denied that the world is suffering from over-specialization. In industry it has produced a crop of evils; which are shaking the very foundations of our institutions and civilization. In science we have a multitude of experts, each pursuing with concentration his own particular path, sometimes regardless of efforts made in other branches of science, and often largely, if not wholly, ignorant of the results achieved. We have many analytical experts, but apparently no one capable of treating the product of this amazing toil synthetically, none able to survey the whole field and co-ordinate the results of specialized effort.

Now, as every living thing depends for progress, if not for existence itself, upon its ability to adapt itself to changed environment, so with Societies. This is an age of hurry, speed and complexity, but civilization depends upon leisure and contemplation. In every country we observe the expropriation by taxation, or by more violent methods, of leisured classes, but culture has always depended largely on members of those classes. It is an age of specialization, but, as Clive Bell said in 'Civilisation', 'The specialist is never completely civilised'. Even in our Society I observe a tendency towards over-specialization, and this must be resisted if we are to survive.

It is essential for us to realize clearly what our function is, and what our aim should be and to follow it consistently. Our original name was 'The Asiatick Society', and in my belief we should return to it with the addition of the prefix 'Royal'. It recalls the age of the Society and emphasizes the fact that our interests are not confined to Bengal or even India, but are general and unlimited so far at any rate as Asia is concerned. We must always lay stress on the universal scope of our activities and our study of all that is 'produced by nature or performed by man'. Every Asiatic subject is our province. Further, and this to my mind is still more important, we must concentrate upon our own interests to the exclusion of all else, and must not allow them to be in any way subservient to those of other bodies. We can no longer afford the blood-transfusion that we have suffered generously in the past. And above all we must seek greater support from the general cultured public. Our aim must be to provide something of which there is urgent need and which other Societies do not provide—a centre of general knowledge and culture. Ours should be a common platform upon which specialist and non-specialist can co-operate, where East can meet West and where the expert and the man or woman of broad culture can exchange views without embarrassment.

Our publications, again, should be such as will be readable by and intelligible to any man or woman of intellect and culture. Specialist scientific institutions and societies and the Universities and Departments of Government which publish the results of research, now absorb much of the material which used to be sent to our Society for publication. Science has developed a special terminology, almost what I may call a jargon of its own, which is unintelligible to anyone but an expert. It is probable therefore that the publication of the most important of such research work is not being and will not in future be offered to us, and, even if it were not so, the publication of such very technical and specialized work is unsuitable for a Society such as ours. In these circumstances, we must consider whether it will be in the interest of the Society to continue publication of this kind of material, or whether we should concentrate our energies more explicitly upon what may be called orientalist lines.

As the years have passed since first I became a member, I have noticed a slowly creeping inertia and lack of interest in our Society among the general body of our members, and an increasing interest on the part of specialists and professional scholars. The vivid general interest which created the Society and sustained it for so many years seems to have died away. Some members seem to regard membership merely as a badge of respectability, or social or intellectual superiority, or of learning, to be worn only on special occasions such as this. Some

seem to allow themselves to be over-persuaded to accept membership, in which they have no real or sincere interest and which they have no serious intention either of using or retaining. Our monthly meetings are feebly supported, I think the average attendance is about a dozen. Some even of the general lectures which have been arranged have lacked support.

I am quite sure that to a large extent the explanation is that the ordinary members have felt a lack of interest in the subject-matter of some of the papers read and the lectures delivered, and I will go so far as to admit frankly that I have often sympathized with them, partly because the papers have been the result of specialized scientific research, and not easily understandable even by intelligent and cultured men or women and partly because the subject seemed to be so far removed from those vital matters which absorb our attention to the exclusion of all else in this modern and rapidly changing world. The objects of our Society are not limited to a Museum or a Library or even to Publications of international repute but above all include the provision of a centre for the promotion of broad and general culture and civilization. India itself is in rapid evolution, and there is pressing need of a centre for the discussion of such of its vital problems as are within our province as a learned Society. I am of course aware that such matters as party politics, sectarian religion, and all such questions as are liable to excite angry discussion are and always should be outside our province. But political, economic and social science, comparative religion, philosophy, the ancient and modern literature of East and West, Art in general, even the science of Government, and in fact all such subjects as are within the province of the cultured man, are fit matters for study and discussion by members of our Society.

The question arises whether the cultured man, the intellectual, the man of broad general culture is not gradually becoming extinct. Whether in this world of trouble and unrest, in this tremendous and amazing period of transition his place has not been taken by those much less pleasing figures, the 'intelligentsia'. One thing seems to me quite plain—that the local support of European men of culture, to which the Society owes its creation and to a great extent its importance and success in former years, is fast disappearing, owing to vastly increased and increasing facilities for transport and communication. In the history of the world culture and civilization always have depended upon a nucleus of men who have enjoyed a certain amount of leisure. Without some leisure there cannot be either civilization or culture. The leisure which the European used to spend in India is now more often spent in Europe and there is an increasing tendency for him to devote his time and energy while in India to the development of his business or the practice of his profession and the preservation of his health, and to postpone intellectual

endeavour and cultural activity until the day when he returns either temporarily or permanently to his native land. His eyes are always upon the western horizon. In these circumstances it is clear that the future of the Society must depend, more and more as the years pass, on Indian men and women of culture and intelligence. The torch is falling into their hands, and they are faced with a serious challenge. It would be a sad thing if the future produced only specialists and professional scholars, and men of broad culture disappeared from the Indian scene. Such a possibility is not improbable. For many years to come the vital energies of Indians who are not engaged in specialist research or professional work will be absorbed largely in party political matters and industrial expansion.

These then must be the aims and objects of all our efforts as members of this ancient cultural Society. To maintain a meeting place for cultured man, to preserve and encourage the growth and extension of Asiatic culture and to provide an active, vital centre for study and discussion, and the materials for that study of which we already possess so great and so valuable a store.

My object this evening has been to stimulate thought. The position is precarious. Time is short. We must act quickly. I hope and trust that I am mistaken in my belief that the first signs of rot in our Society's constitution are already perceptible. But lest my suspicions be justified, I beg of you all and especially the members of your Council and your Officers to set your minds on the consideration and solution of this important problem with the same zeal, energy, concentration and sound judgment as has been devoted to our labours of reorganization.

JOHN LORT-WILLIAMS.

CALCUTTA,

3rd February, 1941.

OFFICERS AND MEMBERS OF COUNCIL.

ROYAL ASIATIC SOCIETY OF BENGAL, 1941.

*Elected and announced in the Annual Meeting,
3rd February, 1941.*

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EXHIBITION ANNUAL MEETING.

LIST OF EXHIBITS SHOWN AT THE ANNUAL MEETING OF THE ROYAL ASIATIC SOCIETY OF BENGAL ON THE 3RD FEBRUARY, 1941.

1. ARCHAEOLOGICAL SURVEY OF INDIA.

I. Inscribed plaque from Mahasthan, Bogra District, Bengal.

Inscription in Brāhmī characters of the Mauryan period (3rd century B.C.) recording an order issued from Puṇḍanagala (Puṇḍra-nagara = Puṇḍravardhana = Mahasthan) for helping people in distress with corn and coins.

II. Inscribed bowl of grey schist from Dir State, N.W. India.

Contains a small inscription in Kharoshthī characters mostly of the Kushana period, reading as 'Jayatasa 4 sahirana (?)'. The language is the North-Western variety of Prakrit.

2. GANENDRA NATH BANERJEE.

1. Replica of Ganesh—Prom-Penh Museum (Cambodgienne).
2. Lion—Brass Lion Pedestal. Bengal.
3. Vishnu—Bangkok (Thailand).
4. Portion of stupa—Gandhara.
5. Wooden mask of makara (Bali.)

3. BANGIYA SAHITYA PARISHAD.

Manuscripts of a little-known printed work:—

- I. Sringararasapaddhati*—copied from an edition printed in 1840.

- II. Sringaratilakapaddhati*—copied from an edition printed in 1856.

These manuscripts of one and the same work, published under different names, contain the Bengali translation of a Sanskrit work. For details cf. C. Chakravarti—*Sahitya Parisat Patrika*, 39, pp. 258-9.

4. PERCY BROWN.

(LENT BY RAI BAHADUR RADHA KRISHNA JALAN OF
PATNA CITY.)

Painted Cloth from Nepal.

Two borders of cloth, each over 20 feet in length, and painted with a long series of figure-subjects evidently illustrating some mythological or historical subject fully described by inscriptions. The technique is 'egg tempera' and it was executed probably in the 18th century, if not earlier. It appears to be of Nepali origin.

5. CALCUTTA UNIVERSITY—CURATOR, ASUTOSH MUSEUM OF INDIAN ART.

*A Vishnu Patṭa in black stone. Found in Bogra, Bengal.
Date c. 10th or 11th century A.D.*

Both the obverse and the reverse of the Patṭa are decorated with beautiful carvings. The uppermost corners of the obverse are occupied by two flying Gana figures and in the rectangular compartment between them is seen the Seated Lakshmi with two elephants pouring water on her (Gaja-Lakshmi). The square in the middle is occupied by Vishnu seated on a lotus-throne. On two sides of Vishnu Gaṅgā and Yamunā are standing in Tribhaṅga pose. Below Vishnu is seen Garuda, on two sides of whom are two Gana figures in crouching pose. Almost the whole of the reverse is covered with a ten-petalled circular lotus; each petal is slightly hollowed and in the cavity thus formed the ten Avatāras of Vishnu are shown in relief.

6. SUNITI KUMAR CHATTERJI.

A Selection of Ivory and Horn Work.

I. Indian, including Nepali and Ceylonese.

1. Mother and Child. Old, folk-art of primitive style. Ivory relief plaque, South India, Tamil Land.

2-3. Pair of Ivory Plaques forming Hilt of Dagger. Figures of Nude Women in dancing pose. Old. North Indian, probably Rajputana (Jaipur) work.

4. Standing Figure of Man with a long Bow. (Top of Bow damaged). Old. Bengal (Murshidabad) work.

5. Seated Figure of Vaishnava Teacher. Modern. Bengal (Murshidabad) work.

6. Standing Hanuman. Modern. Andhra or Telugu (Vizagapatam) work.

7. Seated Ganesa. Modern. Travancore (Trivandrum) work.

8. Standing Krishna. Modern. Travancore (Trivandrum) work.

9. Standing Nayar Woman. Modern. Trivandrum.

10. Tamil Bride, Standing Figure. Modern. Trivandrum.

11. Palniyandavar, or Young Skanda as Sivaite Mendicant. Modern. Trivandrum.

12. Buddha and Sujata. Modern. Nepal (Kathmandu).

13. Standing Buddha, with painted wooden Background. Old. Kandy.

II. *Burmese.*

14-15. Horseman and Elephant-rider. Chess Figures in Old Style. Modern. From Rangoon.

III. *Javanese.*

16-17. Two carvings in Deer Horn. Human Figures in Primitive style as Seal Handles. Sundanese (West Javan) work.

18. Seal Handle in Buffalo Horn. Bust of Figure in *Wayang Purwa* or Classical Theatre Dress. East Javanese work.

IV. *Chinese.*

19-20. Two of the *Pa Hsien* or Eight Immortals. Old. Painted in Brown Patina. South China work.

V. *Japanese.*

21. Chinese Sage. Modern.

22. Girl binding her sash. Modern.

7. GEOLOGICAL SURVEY OF INDIA.

The Sulphur Problem in India.

Map showing occurrences of sulphur, pyrite and gypsum in India.

Specimens:—

Sulphur, Baluchistan

Sulphur, Afghanistan

Pyrite, Bihar

Pyrite, Simla

Chalcopyrite, Singhbhum, Bihar

Pyrrhotite, Bihar

Gypsum, Salt Range, Punjab

Gypsum, Bikanir State, Rajputana

Gypsum, Nr. Rikhikesh, U.P.

8. DR. MRS. EILEEN W. E. MACFARLANE.

I. *Photographs of some Aborigines connected with the Blood Grouping in India.*

1. Card I. Taking and testing Munda bloods, Singhbhum Dist., Behar. (Photos by C. Cleghorn.)

2. Card II. *Malabar and Travancore—Western Ghats.*

Kanakars, Paniyans and *Nayadi* woman. Malayalam-speaking, wandering agriculturalists and hunters. Probably possess Negrito and Australoid strains. Show least of Blood Group B in India and most of Group A.

3. Card III. *Eastern Ghats, south Hyderabad State.*

Chenchus—nomadic food hunters without agriculture. Telugu-speaking but related to tribes of Western Ghats. Show Australoid features. Belong mostly to Groups O and A with Group B coming in by racial crossing. Different physical types shown and two persons afflicted with Yaws. View of their jungle shows *Bauhinia Vahlia* W. & A, giant liana whose seeds they eat. From it the Birhor (Card V) make string, rope and baskets. Note round thatched wattle huts.

4. Card IV. *Eastern Ghats—Bastar State.*

Gadba girls, Koraput District, wearing home-spun, dyed and woven cloths.

Bison Head Maria Gonds—Gondi-speaking, primitive agriculturalists and hunters. Fiery tempered tribe, several convicted murderers met in Jagdalpur Jail. Women shown in hostel of Government Yaws Clinic. Blood Groups O, A and B about equally distributed as in Mundas.

5. Card V. *Chota Nagpur.*

Birhor (Forest Men)—complete nomads and food hunters, no agriculture and no shelters but tents of leafy branches as shown. Speak a Mundari dialect. Make string, nets and baskets from liana bark to sell. Relish monkey flesh. Show Australoid features. Small camp visited in Singhbhum District. No bloods taken.

6. Card VI. *Chota Nagpur—Mundas of Singhbhum Dist.* Primitive agriculturalists and hunters. Blood groups show they are related to Maria Gonds.7. Card VII. *Chota Nagpur—Oraons of Ranchi Dist.* Primitive agriculturalists and hunters. Dancing scenes and physical types. Belong chiefly to Blood Groups O and B.8. Card VIII. *Bengal—Immigrant Oraons, labourers in 24-Parganas Dist.* Note man with frizzy hair. Differ in blood group distribution from neighbouring Mundas.

Bagdi boy and child, 24-Parganas Dist. Agriculturalists with aboriginal affinities.

9. Card IX. *Aurangabad District, Deccan—Bhils, primitive agriculturalists and hunters.* Younger men shown are descended from converts and are now called Mohammedan Bhils. Small group showed over 50% in Group B.

Banjars—carriers by trade, nomads now settling down to be cultivators. Blood groups show a north Indian strain—not aborigines. Note women's elaborate costumes.

10. Card X. *Darjeeling District, North Bengal.*

Nepalese women and a *Lepcha* girl at Kalimpong. Mongoloid hill people. Differ from Bengalees in having more of Group A than Group B. Have less of B than Bengalees but more than Tibetans.

11. Card XI. *Tibet, Sikkim and Bhutan—Bhutias, the Mongoloid Mountain folk.*

Like other isolated peoples they belong chiefly to Groups O and A, but Group B is coming in through racial crossing with Chinese and Nepalese.

12. Card XII. *Khasi Hills, Assam*—*Khasi* young people and megaliths, Cherrapunji. Blood Group distribution resembles that in Tibetans. Mongoloid Hill people.

II. *Prehistoric Cyst Grave, excavated. Near Hyderabad City, Deccan. Photographed March, 1940.*

9. ROYAL BOTANIC GARDEN, CALCUTTA.

1. *Tung-oil yielding Plants Cultivated in India.*

Experiments on the cultivation of some of the Tung-oil yielding plants in the Royal Botanic Garden, Calcutta during the last half a century and sufficient data collected from the experimental cultivation in Assam, Behar, Bengal, Mysore and Burma indicate that cultivation of Tung-oil trees on a commercial scale will be successful in India.

Sketches of the different species of Tung-oil yielding plants together with actual specimens are exhibited. Fruits and seeds of *Aleurites Fordii* and *Aleurites montana* are also displayed.

A map showing the distribution of Tung-oil trees in their original habitat is also exhibited.

II. *Some Rare Plants of the Botanical Garden.*

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| 1. <i>Saccolabium guttatum</i> —
<i>Rhyncostylis retusa</i>
Blume. | East Indies and Malaya. Hardy garden epiphytic Orchid. Introduced—1932. |
| 2. <i>Dracaena</i> sp. (Showing
bud mutation.) | The green plant has given out a variegated branch which can be taken out and propagated as a garden variety. |
| 3. <i>Lycopodium phlegmaria</i> L. | India and Malaya. Introduced from Assam in 1939. The species can be propagated from cuttings and layering. |
| 4. <i>Primula obconica</i> Hance .. | This was introduced from China and are grown from seeds. These can be seen in the Eastern Himalaya. |
| 5. <i>Begonia hydrocotylifolia</i>
Otto. | Mexico. This can be grown from seeds as well as from cuttings. Introduced in 1900. |
| 6. <i>Saxifraga purpurascens</i>
Hook. | Region Himalaya. This can be grown as an annual in Calcutta. |
| 7. <i>Ananas sativus</i> Schult var.
variegata. | America. This was introduced in 1926. The fruit is insignificant. This can be propagated from the cuttings as well as from the buds that develop under the fruit. |
| 8. <i>Mammillaria tenuis</i> D.C. | Mexico. This plant was introduced in this garden at about 1840. The plant can be produced both from seeds and cuttings. Flowers many, creamy during April to July. |

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| 9. | <i>Echinocactus tubiflorus</i> Hort. | Mexico. The seed was brought from Germany in 1933 and the plant was raised. |
| 10. | <i>Echinocactus</i> sp. .. | This was raised from seeds in 1933. Seeds obtained from Germany. |
| 11. | <i>Echinocactus LeContei</i> Engelm. | Mexico. This is a gigantic species, raised from seeds, obtained from Germany in 1932. |
| 12. | <i>Nepenthes Khasiana</i> Hook.f. | Assam. Insectivorous plant. Introduced from Assam. Can be propagated from air layering. |
| 13. | <i>Gymnogramme Calomela-nos chrysophylla</i> Kaulf. | West Indies. Gold Fern. |
| 14. | <i>Adiantum tenerum</i> var. Farleyense. | Sterile fern received from West Indies. This is propagated by division. |
| 15. | <i>Adiantum Lathomii</i> var. .. | A sterile sport from <i>A. Lathomii</i> separated in this garden. This can be propagated by division only. |
| 16. | <i>Nephrolepis Marshalli</i> .. | A garden variety of compact and delicate habit. |

10. SCHOOL OF TROPICAL MEDICINE.

I. Serological Method of Blood Taking and Blood Grouping.

- 1-2. Two diagrams of serological constitution of blood groups.
3. A model of one of the diagrams.
4. Potain's Aspirator for taking blood in a closed system without much discomfort to the donor.
5. Cellophane bag for concentrating plasma.

II. *Trichophyton crateriforme* Bodin, 1902.

The fungus is recorded for the first time in India and is responsible for causing ringworm infection of the scalp in a group of girls in a board School in Calcutta.

In 1845 Malmsten first described the disease as *Trichophyton tousurans*. The fungus belongs to the class—Hyphomycetes. Genus *Trichophyton*

Cultural characters:—Early culture shows a round growth with a velvety surface; with age, the centre becomes raised and forms a central depression giving the appearance of a crater of volcano and hence the name *crateriforme*.

Pathogenicity:—Causes ringworm of the scalp, clinically indistinguishable from other form of *Trichophytosis*.

III. Oriental Sore.

1. A case (Photograph) showing lesion on nose.
- 2B. The causal organism as seen in tissues and in cultures.

IV. *Acute Infective Jaundice.*

1. *Leptospira icterohaemorrhagiae*, the spirochacte responsible for the disease in the tissues of experimentally infected animals.
2. *Leptospira* as seen in culture under the dark ground illumination.

V. *Rat bite fever.*

1. Cases (coloured plates) showing lesions at the site of bite.
2. *Spirillum Minus*, the causative organism as seen in the blood and peritoneal fluid of the infected mice.

11. **BAHADUR SINGH SINGHI.***Farmans of the Mogul Period.*

1. Farman granted by Jalalu-d-din Muhammad Akbar Shah Badshah Ghazi to Bhagwan Qanungo of the Subah of Bengal when he presented himself in the Imperial presence; in recognition of his loyalty, faithfulness and best services, confirming his appointment of the office of Qanungo which he held and issuing the Imperial edict to all concerned to work in collaboration with him and also to take his decisions in all affairs concerning the land affairs of the Subah and granting the sum of Rupees Two thousand seven hundred and fifty and Seven thousand Bighas of cultivable land in Mahal Monohar-shahi as reward besides the customs due and available to the Qanungo; dated the 7th day of the month of Aban-e-Ilahi in the regnal year 36 equivalent to 11 Zilhaj, Hijri year 999.

Bearing the seal of the Emperor.

Reverse

Entry of the Prime Minister Saif-al-din Fatch Khan,
Paymaster-General Shaikh Farid Khan and Raja Todarmall.
Bearing seals of Farid Khan, Asaf Khan and Todarmall.

2. Farman granted by Jalalu-d-din Muhammad Akbar Badshah Ghazi, appointing Qazi Nizam to the office of the Qanungo of Bijnor. His duties will be to collect the revenues, encourage the ryots to settle there and generally look after the welfare of the people. Dated 29 Rabi II, 978 A.H. (September 1570 A.D.)

Bears the Emperor's seal.

3. Farman granted by Nuru-d-din Muhammad Jahangir Badshah Ghazi to the principal officers of the State. They are not to introduce any innovations in the established practice and procedure of the administration and are to refrain from levying certain specified taxes. Dated 10 Amardad 19 Ilahi (1605 A.D.)

Bears the *tughra* and the seal of the Emperor.

4. Farman granted by Abu-al-Zafar Muhi-ud-din Muhammad Aurangzeb Alamgir Badshah to Mu'taminu-d-Daulah. Desires him not to give any definite reply to Ghalib Khan who has offered to win over the Qilahdar of Sholapur to His Majesty's side, for His Majesty has already commissioned Adil Khan for the task. Wants him to give an appointment to Bahlol's son and assure him of the royal favour. Eraj Khan is appointed governor of Berar in place of Shahbaz Khan, deceased. Leaves it to his discretion either to re-appoint Persu, Yusuf and Karan to the cavalry or to dismiss them.

The services of the 900 musketeers already with him and 1,000 men that are being sent there under Mustafa Khan shall be retained till the expedition comes to a successful close. Their pay will be met from the Imperial Treasury. Dated the 22nd Jumada II, 3 Julus (1661 A.D.).

Bears the Emperor's autograph and seal.

5. Farman granted by Abu-al-Zafar Muhi-ud-din Muhammad Aurangzeb Alamgir Badshah appointing Shaikh Imadud Din the Qazi and Muhtasib of pargana Sandela in *sarkar* Lucknow. He is granted 200 bighas of land out of the pargana for his services and is forbidden to levy unauthorized cesses. Includes other instructions. Dated 11 Rajab 23 Julus (July 1681 A.D.)

Bears the seal of the Emperor.

6. Farman granted by Abul Fateh Nasir-al-din Muhammad Shah Bahadur Badshah Ghazi, in regard to the office of Kanungoi of half the province of Bengal, fallen vacant on the death of Darp Narain, to which his son Ishwar Narain, like the deceased, on the acceptance of Peshkash of Rupees Ten lakhs by the Imperial Court, was appointed, with the same privileges as before and with the order that he shall carry on fully the duties assigned to that office; dated 17th Safar in the regnal year 8.

Bearing the seal of the Emperor.

Reverse

Bears the seals of Minister Emad-al-daulah Qumar-al-din Khan Chin Bahadur Nusrat Jung and Raja Amar Singh, son of Raja Raghunath.

7. Farman granted by Abu Nasar Moin-al-din Muhammad Akbar Shah II, Emperor of Delhi, conferring honour on Syed Jafar Ali Khan Bahadur by bestowing upon him the title of Zulfekar-al-dowlah Muzaffar Jung and ordering the Imperial Princes, Wazirs and all concerned to use this style in addressing the aforesaid Khan. Granted on 27th day of Zilhaj in the regnal year 1.

Bearing the seal of the Emperor.

8. Farman granted by Abu Nasar Moin-al-din Muhammad Akbar Shah II, Emperor of Delhi, conferring on Muhammad Taqi Khan the title of Bahadur Bahram Jang and on Syed Muhammad Khan the title of Iquidar-al-dowlah Bahadur Karim Jang and on Syed Matlab Khan the title of Mukram-al-daulah Bahadur Asad Jang and on Syed Muhammad Reza Khan the title of Fakhr-al-dowlah Bahadur Shumsher Jang and on Syed Muhammad Hadi Khan the title of Imtiaz-al-dowlah Bahadur Bahadur Jang and on Syed Ashkari Khan the title of Nusrat-al-daulah Bahadur Munir Jang and directing the Royal Princes and the Ministers and the grantees of eminence and all concerned with the Imperial Court as also the administrators of the provinces to conform submissively to the Imperial order hereby given at an auspicious moment under the Imperial seal on the 8th of Safar-al-Muzaffar in the regnal year 11.

Bearing the seal of the Emperor.

As by this one Farman titles have been conferred on six different personages of the Emperor's Court, it is presumed that this Farman is a Court copy for preservation in the Imperial archives and also to be used for the purpose of proclamation from the Grand staircase of the Jumma Masjid on the day of the conferment of the titles.

9. Farman granted by Ghazi-al-din Haidar, Nawab of Lucknow, granting on his accession to the throne an annuity of Rupees Two thousand four hundred to the divine Moulvie Syed Muhammad Baker

and Maulavi Saiyad Muhammad Sadiq, sons of the great divine Maulavi Saiyad Muhammad Saheb with effect from the 28th Rabi-ul-awal Hijri year 1248.

Bearing the seal of the Emperor.

12. ZOOLOGICAL SURVEY OF INDIA.

I. The Real Sacred Sinistral Chank and its Model.

To the religiously-minded who seek to possess a Dakshināvarta Shankha or the sinistral chank at any cost, the model exhibited here should serve as a warning. The sinistral chank is an extreme rarity, one in about six million normal dextral shells of the sacred chank fishes being of the abnormal sinistral form. When it is remembered that during the last 300 years of chank-fishing on the Indian coasts only 120 sinistral shells have been obtained according to an authoritative estimate, the rarity of the Dakshināvarta Shankha is beyond question.

The model prepared for exhibition in the Invertebrate Gallery of the Indian Museum and exhibited here with the original is a good imitation of the latter, and no one with a sincerely religious mind would care to test the genuineness of his would-be treasure by dropping it on a piece of granite or by using against it the hammer.

The left-handed Chanks are known to the Tibetans as *ya cheil dung-Kar*, to the Chinese as *Yu hsuan pai-let*, and to the Tamils as *Valamruri Sangu*. They form an important part of the treasures of rich and orthodox households, temples, and mutts to which they are often dedicated as offerings by the devotees.

A good-sized sinistral shell of quality may fetch a price varying from Rs.500 to Rs.5,000 depending on the weight of the shell in tolas.

II. Specimens of Bark Cloth from India and Oceania.

The use of bark of various trees, for purposes of clothing was very extensive in ancient times and references were made in the Ramayana (I. 1) and Mahabharata (I. 157. 1-2). At the present time its use is restricted to several aboriginal tribes of India, the Andaman and the Nicobar Islands, Malaysia, Melanesia, Africa, and Central and South America.

Specimens of bark cloth of the Garos (Assam), the Kadars (South India), Nicobarese, the Malays, the Javanese, Fijian and the Polynesians (Hawaii) are exhibited here.

The bark of the trees used are: (i) Prap (*Ficus Rumphii*), (ii) Chram (*Artocarpus Chaplasha*), (iii) Pakram (*Grewia liliae folia*), (iv) Dumbri (*Ficus Glomarata*), (v) Anisep (*Kydia Calycina*) in the Garo hills; Arayiru (*Antiaris Toxicaria*) among the Kadars; *Ficus brevicuspis* among the Nicobarese; and paper Mulberry (*Morus papyrifera*, *Broussonetia papyrifera*) in Melanesia and Polynesia.

They were used originally as clothing but now mostly as sleeping mats and blankets.

The method used for preparing the bark is everywhere the same with minor variations. It may roughly be described as follows:—A young and a straight branch is cut off and subjected to a thorough pounding by a smooth stick after which a pointed stick is run along the whole length of the branch under the bark which is split open and pulled off. The outer layers of the green bark are carefully shaved off until the reddish brown fibre is exposed. This is then laid on a smooth surface and well pounded from one end to the other,

running along, and net across the fibre, with a serrated mallet. When this is done it is doubled over lengthwise and again beaten and the process is repeated until the bark is reduced to a thick mass of fibre. The layers of the fibre are then unfolded and the moisture wrung and dried in the sun.

In cases of large ones, the pieces are either struck together by gum or sewn. In Malaysia barks are soaked in water for several days before being beaten to obtain the necessary colours. In Melanesia and Polynesia, the barks, after being prepared are ornamented with designs made from natural dyes.

The whole process of the manufacture of bark cloth is carried out by both men and women except in Melanesia and Polynesia where the art is confined to women.

III. Artificially Deformed Skull of a Chinook from the Columbia River, Oregon, N. America.

The practice of the artificial deformation of skull was resorted to in ancient times and is still found among many tribes.

There are several methods by which skulls can be artificially deformed affecting different regions of the skull, e.g. occipital, frontal, occipito-frontal, fronto-sincipito-occipital, etc.

Of the occipito-frontal deformations one is known as: (1) 'couché' or flat, and (2) the other is 'dressée' or erect. Both are prevalent among the Chinooks of Oregon, who live in the Columbia River valley.

The skull exhibited is of an adult Chinook, presumably male, and was acquired from the American Museum of Natural History of 1882. It shows occipito-frontal deformation of the 'dressée' type. The forehead and the back part of the skull are so flattened that the cranial vault has acquired a peculiar shape, rising steeply to the back.

There is a broad depression on the anterior part of the parietal bones reaching to the squama of the temporal bone. Traces of other depressions are noticeable running backwards from above the ear-holes. There are traces also of an injury on the top of the right parietal bone, partially healed.

The accompanying sketches show how artificial deformation of skulls is brought about by swathing the head of the new-born baby in bandages, or fixing it between wooden boards for several months. The custom was prevalent in Pre-Columbian times among the tribes of Peru, North Mexico, the old Cliff-dwellers and Mound-builders in Florida and among the Calchaqui in Argentine. It is still found among the Apaches Navahos, Pueblo-Indians, etc. In Europe it is practised in Southern France, Normandy, Brittany, etc.

13. ROYAL ASIATIC SOCIETY OF BENGAL.

I. Some interesting Manuscripts with paintings, etc., from the Arabic and Persian Section.

(1) *Qur'ân Sharif*.—A copy notable for its superb calligraphy. The entire copy of the Qur'ân is written in 32 foll. Each *pāra* is practically completed in two pages, and a very interesting feature of the MS. lies in the fact that each line starts with *alif*.

(2) *Shāhnāma*.—An old copy of the great work of Firdausi Tūsī in 2 vols. containing 60 illustrations. It was written in A.H. 1017–A.D. 1608. (Repaired in 1937.)

(3) *Tafsir-i-Qur'ān*.—An early Persian commentary on the Qur'ān by Muḥammad b. Maḥmūd Nishāpūrī in 2 vols. The copy, an excellent specimen of the calligraphic art of Khorāsān, is written by an expert scribe, 'Alī b. Muḥammad b. Aḥmad al-adīb al-Bukhārī Sayyidu'l-Khaṭṭāt, in A.H. 685–A.D. 1286. (It was repaired in 1940.)

(4) *Al-Ikhtisār wa't-Tajrid*.—An autograph copy by Muḥammad bin Uthmān-al-Khalīlī. It is a work on tradition, compiled in A.H. 728—A.D. 1328.

(5) *Al-Jam' bayna'ṣ-Ṣaḥīḥayn*.—A copy of the rare work on tradition by Muḥammad bin Abī Naṣr Futūḥ al-Andalusī, who died in A.H. 438—A.D. 1095. This MS. is stated to have been collated with the autograph copy in Damascus by the Khatīb of the mosque in A.H. 711—A.D. 1311. (It was repaired in 1935.)

II. Some old Sanskrit Manuscripts.

(1) *Kuṭṭanīmata*.—It is about 750 years old.

(2) *Naiṣadhaśerita* (with commentary by Narahari).—This copy was made about 400 years ago. (Repaired in June 1940.)

(3) *Bṛhatī or Prabhākaramīmāṃsā*.—The author is Prabhākaramiśra. This manuscript is also about 400 years old. This is probably the only MS. containing the first six chapters of this work, now extant.

(4) *Bhāṣavāṇī by Satānanda with commentary by Balabhadra Dāvajña*.—The author of this astronomical work is older than Bhāskarācārya. The manuscript is about 250 years old.

(5) *Commentary on Aṣṭasāhasrikāprajñāpāramitā by Maitreya*.—It is a work on Bauddha philosophy. No other copy is probably extant.

III. Old and rare printed books traced in the Library of the Society.

1. Baldaeus: *Description of East India, Coasts of Malabar, Coromandel and Ceylon, and of the Idolatry of the Pagans in the East Indies*, Vol. III, pp. 563–901. London, 1703.

The book contains description of the kingdoms of South India and Ceylon in the 17th century; their cities, chief harbours, temples, products and living creatures, as well as manners and customs of the inhabitants. The book contains maps and sketches 'drawn to the life and cut in copper-plates'.

2. Pozzo: *Rules and Examples of Perspective proper for Painters and Architecture*, etc. London, 1707.

The book deals with the 'Rules and examples of perspective proper for painters and architects, etc., in English and Latin'. It contains 'a most easy and expeditious method to delineate in perspective all designs relating to architecture, after a new manner, wholly free from the occult lines by that great Master, Andrea Pozzo, Soc. Jes., engraved in 105 ample folio plates, and adorned with 200 initial letters to the explanatory discourses'.

The book is dedicated to 'Her Most Sacred Majesty Queen Anne' by the translator, John Strut.

3. *A short History of the East India Company and of their trade to India and China*, Second Edition, London, 1793.

The book gives 'a short history of the East India Company exhibiting a state of their affairs, abroad and at Home, political and commercial; the nature and magnitude of their commerce, and its relative connection with the Government and revenues of India, and a discussion on the question of right to the conquered territories in India; also remarks on the danger and impolicy of innovation, and the practical means of ensuring all the good effects of a free trade to the manufacturers of Great Britain and Ireland, by matter of Regulation, without disturbing the established system'.

The book is by F.R.

4. Wilks: *Report on the Interior Administration, Resources and Expenditure of the Government of Mysore under the System prescribed by the orders of the Governor-General in Council, dated 4th September, 1799.* Fort William, 1805.

The author of the book is Major M. Wilks, 'of the establishment of Fort St. George, Acting Resident at Mysore'. It was 'printed by the order of the Governor-General in Council, Fort William, 4th May, 1805'.

The book deals with the report on the state of affairs of Mysore immediately after the Mysore War and contains statements of the gross revenues and disbursements from the year 1799 to 1803.

It is written on the title page that the book is a 'present to the Asiatic Society by Lord Wellesley, 3rd July, 1805'.

5. Warren Hastings: '*A narrative of the Insurrection which happened in the Zemedyary of Banaris in the month of August, 1781, and of the Transactions of the Governor-General in that District; with an Appendix of authentic papers and Affidavits.*' Roorkee, 1853.

The first edition of this book was published by order of the Governor-General in 1787, but the copy of the Society is a re-printed edition of the same at the C.E. College Press, Roorkee, 1853.

The author's name does not appear on the title page, but the first letter that appears after the title page and the Introduction, both bear the signature of Warren Hastings. It was written 'to guard the minds of my superiors against the suspicions to which all great political movements are liable, especially such as pass at a distance from observation, and are attended with violent convulsions, or revolutions in any of the great dependencies or relations of Government, and to which from their conformity to that description my late transactions in Banaris were particularly exposed'.

6. Colebrooke: *A Grammar of the Sanskrit Language.* Vol. I (printed at the Honourable Company's Press, Calcutta, 1805).

Colebrooke's Sanskrit Grammar is the first of its kind to be printed and published. The author was a great Sanskrit scholar, who was the President of the 'Asiatick Society' of Bengal from 1806 to 1815 and the founder of the Royal Asiatic Society of Great Britain and Ireland, and his grammatical observations are noteworthy. The work is exceedingly scarce and difficult to obtain. It appears that only Volume I was printed.

IV. The Society's Publications in 1940.

(1) Journal:—

(a) Letters, (b) Science, (c) Year-Book.

(2) Memoirs.

(3) Bibliotheca Indica:—

- (a) Arabic and Persian.
- (b) Sanskrit.
- (c) Sanskrit and Tibetan.
- (d) English Translations.
- (e) Lushai-English.
- (f) Maithili.

(4) Catalogue of Manuscripts :—
Sanskrit.

ANNUAL REPORT FOR 1940.

The Council of the Royal Asiatic Society of Bengal has the honour to submit the following report on the state of the Society's affairs during the year ending the 31st December, 1940.

During the year the re-organization and overhauling of the work of the Society recommended by the Special Enquiry Committee was steadily pursued and though a great deal still remains to be done before the task can be completed, sufficient progress was made to ensure efficient administration and to recover in a great measure the ground lost during past years. With the introduction of system and order and co-ordination of work in the office it was found possible to deal fully and expeditiously with all the business and correspondence of the Society. Similarly, notwithstanding heavy capital expenditure for steel furniture and a large outlay on printing, binding and repairing of MSS. and books, the finances of the Society were placed on a sounder footing by the reduction of the salary bill from 59% of the total income of the Society in 1937 to 44% in 1940, and elimination of all avoidable expense. The installation of steel shelving enabled the valuable printed collections and manuscripts belonging to the Society to be more safely housed. Additional facilities, in the shape of a furnished room set apart for study and the extension of library hours, were provided for members and visitors. For an institution of the type of the R.A.S.B., however, these improvements are not enough; its position in the international world of learning being dependent on the prestige its publications command in the estimation of kindred bodies. The solicitude with which scholars and scientists are now regarding the pages of its Journal and Memoirs as proper media for their researches, and the numerous requests received for exchange, augur well for the future of the Society as the premier academic institution in this country.

Mr. J. R. Seal, M.B.E., who worked as Assistant Secretary from August 1938, left the service of the Society in May, 1940, to fill the post of Secretary of the Karachi Chamber of Commerce, and Mr. J. C. De, M.A. (Lond.), Lecturer in History in the University College, Colombo, was appointed in his place. The Council takes this opportunity of placing on record its high appreciation of the services rendered by Mr. Seal during a period of heavy strain and stress consequent on the re-organization of the affairs of the Society.

Ordinary Members.

Gains and Losses.—These were as follows:—

<i>Gains.</i>		<i>Losses.</i>	
Elections carried forward ..	7	Lapses of elections ..	15
New Elections ..	51	Elections carried over ..	9
		Deaths ..	7
		Resignations ..	9
		Rule 38 ..	7
		Rule 40 ..	10
TOTAL ..	58	TOTAL ..	57

Initial total 386; net gain 1; final total 387.

Rule 38.—This Rule concerning members whose subscriptions are in arrears, was strictly applied and the names of 7 members were removed from the roll.

Membership List.—The annual detailed checking of the membership list with the membership card index was made.

Life Members.—The number of our Life-members at the end of the year was 57.

Deaths.—Amongst the distinguished and especially valued members lost to us, whose memory will be cherished, and for whose departure the Society is the poorer, the following may be mentioned:—

1. Rai Bahadur Kanak Lal Barua (1931).
2. Prof. A. C. Vidyabhusana (1905).
3. Rai Bahadur Champaram Misra (1912).
4. J. W. L. Grieve (1900).

New elections.—The election of Ordinary Members, amounting to 51, was the highest for the last five years.

Associate Members.

The following new Associate Member was elected:—

Dr. E. W. E. Macfarlane.

The present number stands at 7, the statutory maximum is 15.

Ordinary Fellows.

At the Annual Meeting held on the 5th February, 1940, the following members were elected as Ordinary Fellows:—

Dr. U. N. Ghoshal.
Dr. B. C. Law.
Dr. R. C. Majumdar.
Dr. H. S. Pruthi.

We lost through death the following:—

Sir E. D. Ross (1910).

At the end of the year the number was 49, the statutory maximum is 50.

Honorary Fellows.

We lost through death the following:—

Sir Joseph John Thomson, Kt., O.M., F.R.S. (1915).

The number at the end of the year was 21; the statutory maximum is 30.

Condolences.

The Council sent letters of condolence to the relatives of the following:—

Rai Bahadur Kanak Lal Barua,
J. W. L. Grieve.

Council.

The Council met 13 times. The attendance averaged 11.

The following resolutions of thanks were passed by the Council:—

To the Editor-in-Chief, Annals of Oriental Research of the University of Madras for placing the Society on the free distribution list for the Annals of the University.

To Sir David Ezra for a donation of Rs.500.

To Dr. U. N. Ghoshal for his report on some old records in the collection of the Calcutta High Court.

To H.E.H. the Nizam's Government for presenting the Society's library with a copy of 'Ajanta' by Ghulam Yazdani.

To Sir Sarvappali Radhakrishnan for drafting a letter of congratulation from the Society to the poet Dr. Rabindra Nath Tagore on the occasion of his 80th birthday.

To Dr. Hidayat Hosain for his acceptance of a reduced monthly honorarium of Rs.100 from Rs.200, for the preparation of the Catalogue of Arabic and Persian MSS. from October 1940.

To Dr. John B. Grant for his help in connection with the Society's appeal to the Rockefeller Foundation for financial help.

To Mr. W. D. West for his letter concerning the continuation of membership of the Society of Dr. J. B. Auden.

To the Outgoing Members of Council for the way in which they have served the true interests of the Society during the period of their Council Membership.

Office Bearers.

Changes in the Council were as follows:—

Sir S. Radhakrishnan was appointed an Additional Secretary for Philosophy from 4-3-40.

Dr. Kalidas Nag was appointed an Additional Secretary for History and Archaeology from 4-3-40.

Dr. B. S. Guha was absent during October and Dr. Prashad officiated for him.

Dr. B. S. Guha, acting Honorary Treasurer from 12-2-40 to 22-2-40; 16-9-40 to 17-10-40 and 23-11-40 to end of the year *vice*

Dr. Bains Prashad, absent.

Absences other than those mentioned above were:—

Sir John Lort-Williams, absent from 1-9-40 to 11-11-40.

Maharajadhiraja of Burdwan, absent in June and July.

Mr. Percy Brown, absent from April to June.

Dr. K. P. Biswas, absent from 30-9-40 to 2-11-40.

Prof. M. Mahfuz-ul Haq, absent from 2-11-40 to 21-11-40.

Committees of Council.

The Standing Committees of Council, namely, the Finance, Publication, and Library Committees, met monthly, with the exception of the recess month of October, and the newly formed Bibliotheca Indica Committee met once during the year.

The following sub-committees were appointed:—

(1) A sub-committee consisting of Dr. J. N. Mukherjee, Dr. Kalidas Nag, Major C. L. Pasricha and the ex-officio members to review the lists of institutions with which exchanges of publications are made and of institutions and individuals to whom free copies of the Society's Bibliotheca Indica Series are sent, and report.

(2) A sub-committee consisting of Dr. S. P. Mookerjee, Dr. J. N. Mukherjee, Major C. L. Pasricha, Dr. Meghnad Saha and the ex-officio members to select a candidate for the post of Assistant Secretary in place of Mr. J. R. Seal, resigned.

(3) A sub-committee consisting of Dr. Kalidas Nag, Mr. H. C. Chakladar and Dr. B. S. Guha to consider the publication of a special number of the Society's Journal in commemoration of the centenary of James Prinsep.

(4) A sub-committee consisting of Dr. Kalidas Nag, Major C. L. Pasricha, Col. R. N. Chopra, Mr. Percy Brown, Dr. C. S. Fox and Dr. B. S. Guha to make arrangements and advise as to the most suitable method of expressing the Society's congratulations on the 80th birthdays of Sir P. C. Ray and Sir Nil Ratan Sircar.

(5) A sub-committee consisting of the Library Secretary and the General Secretary to consider the disposal of incomplete books and waste-paper found during the process of stock-taking and reorganization of the library, and also the incomplete printed forms, 21 to 67, of Manusmṛti, Vol. I.

(6) A sub-committee consisting of Dr. S. K. Chatterji, Prof. M. Mahfuz-ul Haq, Dr. S. P. Mookerjee, Prof. M. Z. Siddiqi and the ex-officio members to report on a letter dated 15th November, 1940, with enclosure, received from Mr. W. Ivanow, and addressed to the President.

(7) A sub-committee consisting of Dr. S. K. Chatterji, Prof. M. Mahfuz-ul Haq, the General Secretary and the Treasurer to report on a letter from the Government of Bengal asking for the Society's suggestions in connection with the reorganization of the Indian Historical Records Commission.

Finance Committee.

The Finance Committee met on dates a few days earlier than those of the Council Meetings.

Three special meetings were held in March, August and December, the last being for the budget for 1941.

Office.

The measures recommended by the Special Enquiry Committee for office reorganization were adopted and increments of salary given accordingly. With proper allocation of duties, and co-ordination and supervision of office work, the lack of system and discipline, which formerly existed, disappeared and a full and expeditious handling of all business was found possible in spite of a reduced staff. Unfortunately, the sudden departure of Mr. J. R. Seal about the middle of the year slowed down the work of reorganization to some extent. The preparation of an Office Manual, recommended by the Special Enquiry Committee, the need of which had been keenly felt for several years past, and an inventory of the assets of the Society made by Mr. Seal before he left, were, however, of great assistance.

One of the reasons for the difficulty experienced in the quick and efficient handling of correspondence was the confusion into which the files and records of the Society had fallen. It was not easy to trace any letter with its connected papers. It was therefore necessary to rearrange the files properly and put them in order. After careful consideration a suitable classification on lines followed in Government offices was adopted and applied to all current correspondence, in addition to about thirty of the more important older files. It is expected that with the help of a temporary clerk recently appointed the rest of this work will soon be completed.

The regulations concerning leave and holidays are now enforced more strictly and records are kept. Office orders and notifications are entered in a register, circulated to members of the Staff and signed by them.

Another improvement is the rearrangement of the working rooms of the Society on more business-like lines. The old unwieldy wooden racks in the office room have been replaced with steel almirahs in which papers and registers in daily use and Annual Reports and Abstracts of Statements wanted for reference have been neatly arranged. Old records and files not in daily use have been stored in the south-east room on the ground floor, part of which is being used also by the Society's binders for binding works published by the Society.

After installing steel almirahs the main south room has been divided into three parts. The eastern part has been reserved for Chinese and Tibetan MSS. and costly rare works on Archæology, Art and Science. The central part has been furnished as an additional Readers-Room and the western part, formerly used by the File-clerk and Despatcher, is now occupied by the Assistant Secretary. In the General Secretary's room also steel almirahs have been installed containing bound volumes of Council Circulars, and one set each of the Annual Reports and publications of the Society, for ready reference. The south-eastern end of the hall on the first floor containing the working table of Dr. M. Hidayat Hosain has been converted into a regular study in which Prof. Chintaharan Chakravarti and Mr. Trin Chen have also been accommodated. Similarly the rooms occupied by the Librarian and the Press Clerk have been rearranged and fitted with steel almirahs. These alterations have been made with the object of equipping each part as a self-contained unit which will be more convenient for work and easier to organize.

The personnel of the Staff remained unchanged except that Mr. J. R. Seal left at the end of May, Mr. N. Norman on the first of November, and Mr. J. C. De was appointed to succeed Mr. Seal on probation for one year at a salary of Rs.200. No one was appointed in Mr. Norman's place as File-clerk and Despatcher, the Council having decided to combine his duties with those of the Typist.

The permanent menial Staff remained the same, though certain alterations in their duties were made to ensure greater efficiency, and of the four temporary extra hands employed last year three were discharged.

Correspondence.

In spite of the War the numbers of letters received and issued during the year were 3,212 and 2,402 respectively. Of the letters received 818 were applications for the post of Assistant Secretary, 200 were book-orders and 100 were Bank's acknowledgment receipts. Of these only 42 needed attention. 266 letters were issued in addition to 2,136 received which needed replies.

Stock Rooms.

The Stock Rooms were thoroughly reorganized and their contents repaired. After the replacement of the old wooden racks with steel shelves, the three rooms on the south-east of the ground floor were white-washed throughout, the walls up to a height of five feet replastered, the floors repaired with cement,

and damaged and worn-out wooden door-sills replaced with concrete. All saleable publications of the Society were arranged systematically on the steel shelves, and waste papers, surplus leaflets and ant-eaten materials sold by auction as waste-paper for which a sum of Rs.561 was realized.

As a result of the reorganization of the Stock Rooms, the back numbers of the Proceedings of the Indian Science Congress and all Miscellaneous publications of the Society have been placed in the east room, the Journals and Memoirs in the south room and the Bibliotheca Indica Series in the large central hall. The Journals, Memoirs, and Volumes of the Bibliotheca Indica were all dusted and cleaned, made into small packets covered with brown paper and serially arranged on the shelves. Arrangements have been made to clean and dust them regularly throughout the year.

During the past twenty years no stock was taken of the saleable printed material of the Society, and no stock registers were kept. These have now been introduced and the stocks are being entered after being thoroughly checked. But the contents of the stock rooms, as they exist at present, are not secure. The windows, when open, are unprotected and require flexible screens and the east room is without doors. Provision will have to be made for these improvements.

General.

Routine work in respect of the local distribution of the Society's publications, circulars, forms, etc., and the keeping up to date of the addresses and card-registers of Members was carried out as usual, but the posting of Journals, etc., to belligerent and many neutral countries affected by the War was either stopped altogether or was severely handicapped by delays in shipment and the increased rates of postage, etc.

Rules and Regulations.

No changes were made in the Rules and Regulations of the Society except certain modifications in the Fellowship Regulations, Nos. 1, 2, 6, 8, 10, 13, 14 and 17.

Representations.

Indian Museum.—The Society's representative on the Board of Trustees of the Indian Museum, under the Indian Museum Act X of 1910, continued to be Rai Sir Upendra Nath Brahmachari Bahadur.

Kamala Lectureship.—The Society's nominee to serve on the Election Committee of the Kamala Lectureship, administered by the Calcutta University, was Dr. Bains Prashad.

National Institute of Sciences of India.—The Society's representatives to serve on the Council of the National Institute of Sciences of India were Dr. Baini Prashad as Vice-President and Mr. W. D. West as member of Council during the year; and Mr. W. D. West as Vice-President and Major C. L. Pasricha as member of Council for 1941.

Sarojini Basu Gold Medal.—The Society's nominee to serve on the Special Committee for the award of the Sarojini Basu Gold Medal, administered by the Calcutta University, was Dr. Suniti Kumar Chatterji.

Deputations.

The Society received invitations to send representatives to the various functions of the undermentioned bodies:—

Tenth Session of the All-India Oriental Conference at Tirupatti.

Indian History Congress, Fourth Session, 1940, at Lahore.

Congratulations.

The Society sent its cordial congratulations to the following:

To its President, The Hon'ble Mr. Justice Lort-Williams, Kt., K.C., on his appointment as Acting Chief Justice of Bengal.

Visits.

Among a large number of visitors from various parts of the world mention may be made of the following:—

Dr. F. Vreede, Directeur Honoraire du Centre d'Etudes Néerlandaises et du Collège Néerlandais de l'Université de Paris.

P. Wheeler, New York.

Prof. Albert W. C. T. Herré, Stanford University, U.S.A.

Dr. H. I. Poleman, Director of Indic Studies, Library of Congress, Washington.

Lady F. Ginwala, Bombay.

A. N. Cohayre, Esq., Oxford.

Miss Q. J. Jafer, Aligarh.

Thob Than Gyentsen, Monk, Tibet.

Professor Hsu Pah Hung, Nanking University, China.

Prof. Mustapha Fazil Beg, ex-Governor of Alexandria and Professor of Sociology, Istanbul University.

Mrs. D. N. Glenn, Calcutta.

Dr. Miss Spencer of Yale University.

Shri Vijaya Dharma Suri, Jaina Scholar, Bhavnagar.

Awards.

Elliott Prize for Scientific Research.—The annual prize offered for the year 1939 was for research in Geology and Biology (including Pathology and Physiology). Four candidates sub-

mitted papers. The prize was awarded to Mr. P. K. Chatterjee of the Geological Survey of India.

The prize offered for the year 1940 was for Mathematics. An announcement regarding the prize will be made at the Annual Meeting of 1941.

The prize for the next year, 1941, will be for research in Chemistry.

Barclay Memorial Medal.—The (biennial) award of the Barclay Memorial Medal for conspicuous contributions to Medical and Biological Science with reference to India, was announced at the Annual Meeting of 1940. The medal was awarded to Major-General Sir Robert McCarrison, Kt., C.I.E., I.M.S. (retd.).

The next award will be announced at the Annual Meeting of 1942.

Sir William Jones Memorial Medal.—The announcement for the (triennial) award of the Sir William Jones Memorial Medal for Asiatic Researches in Science, including Medicine, will be made at the Annual Meeting of 1941.

Annandale Memorial Medal.—The (triennial) award, for important contributions to the study of Anthropology in Asia, was announced at the Annual Meeting for 1940. The medal was awarded to Prof. Frank Weidenreich of Peiping.

The next award will be announced at the Annual Meeting of 1943.

Joy Gobind Law Memorial Medal.—The next (triennial) award of the Joy Gobind Law Memorial Medal for conspicuously important work on Zoology in Asia, will be announced at the Annual Meeting of 1942.

Paul Johannes Brühl Memorial Medal.—The next (triennial) award of the Paul Johannes Brühl Memorial Medal for important contributions to the study of Asiatic Botany will be announced at the Annual Meeting of 1942.

Indian Science Congress, Calcutta, Prize.—The next award will be made in connection with the next session of the Congress to be held in Calcutta.

Pramatha Nath Bose Memorial Medal.—The Council has not yet decided upon the year in which the initial award shall be made of this medal for conspicuously important contributions to practical or theoretical Geology with special reference to Asia.

Donations.

The Society received a donation of Rs.500 to the General Fund from Sir David Ezra and of Rs.20 to the Permanent Library Endowment Fund from Dr. Chr. von Haimendorf, late of the Vienna University.

Society's Premises and Properties.

In accordance with the recommendations of the Special Enquiry Committee the Building Fund and the Building Repair Fund were amalgamated and a sum of Rs.2,000 was credited to it. Out of the two amalgamated funds Rs.10,000 were spent on steel shelving.

The main work of the installation of steel shelving has been completed. The Stock Rooms, Library, Sanskrit and Arabic-Persian MSS. Rooms, Reading Rooms and the office are now equipped with modern steel racks and cupboards. The greater part of the old wooden furniture has been sold by auction and a sum of Rs.2,007-7-3 realized. Some of the larger almirahs in the Arabic-Persian room were broken up and six new teak-wood almirahs with locks were constructed from the old materials. These have been placed on the ground floor for storing the Society's old records, etc.

Three mosquito-proof cisterns fitted with mosquito-proof covers and M.P. vent connections, etc., and a new one for the urinal in the Members' room were purchased to replace the old unserviceable flush cisterns which were giving trouble. The total cost was Rs.165, but a small part of the expense was recovered from the sale of the old cisterns.

The entire ground floor of the building, including the grand staircase, pillars, Library, Stock and Members' Rooms, was white-washed. Worn-out plaster was stripped off the walls up to a height of five feet and they were replastered with Pudlo cement mixed with creosote as a protection against white-ants, which were found to have attacked corners and door-sills in several places. Altogether 4,033 sq. ft. of cement plastering was done, and 63 running feet of old worn-out door-sills replaced by new ones made of reinforced concrete.

The small room adjoining the back staircase on the north-east of the building which was used formerly for dumping refuse, etc., was cleaned, repaired and replastered with Pudlo cement. It can be used either as an adjunct to the Library or for installing machinery for air-conditioning if desired.

The tarred floor throughout the Stock Rooms and the Library had not been repaired for many years and was full of holes and patches which have been filled up and repaired.

The total cost of the renovation of the rooms on the ground floor came to Rs.711-4-0, and furniture renewals and repairs cost about Rs.90.

The Ica Famulus Camera for making photostatic reproductions of books and MSS. presented to the Society by Count Kozui Ohtani of Japan has been lying unused since its presentation. The camera was found to be intact except the Ica Famulus prism which needed resilvering; but several hundred sheets of photographic paper sent along with it had become

useless and 600 feet of Ilford document paper was procured from England and the camera, after being reconditioned, was transferred to the photographic room of the Zoological Survey of India on loan for safe keeping on the initiative of Dr. Bains Prasad. Up to the end of the year, 237 pages of MSS. and books have been photostated for scholars and members of the Society at a nominal cost of 3 annas per page.

Artistic and Historical Possessions.

A stone inscription lying in the Stock Room was cleaned and placed on the landing near the famous Asokan inscription from Bairat. The inscription is in the Nagri character and is probably of the 14-15th century. Impressions have been taken by the Archaeological Survey and are being studied by experts.

The Society's collection of oil paintings are not well displayed, some are placed too high, and others are not seen to the best advantage. Steps are being taken to display them properly. Some of these paintings were also found to be cracked and the frames damaged. They were carefully examined by well-known artists and an estimate was obtained for their restoration amounting to Rs.2,300, but for financial reasons this work cannot be undertaken at present.

The plaster plaque of Sir William Jones, translating Sakuntala, ought to be executed in either marble or bronze, but no member or well-wisher of the Society has so far offered to bear the cost.

Library.

The Special Enquiry Committee found that the Library, though one of the best reference libraries in India, was in a very unsatisfactory condition. Among measures recommended for its reorganization were the replacement of the wooden racks with modern steel furniture, the taking of stock, and the repair and rebinding of books and manuscripts damaged by insects.

The installation of steel shelving, commenced in 1939, was completed by the end of the year. The progress of the work was delayed to some extent owing to heavy demands on the services of our Contractors, the Bangiya Steel Pratisthan, for war work. With the exception of the Arabic-Persian Room, the books and MSS. in the three other Sections, namely, the European, the Sanskrit and the Tibeto-Chinese, have now been transferred to the steel shelves and arranged serially, after being carefully dusted and cleaned. In the main Reading Room and along the landings on the first floor also, the old open wooden racks have

been replaced with glass-fronted steel almirahs, where reference works, lexicons, and encyclopædias, are kept. Two of these almirahs in the eastern part of the main Reading Room are reserved for new accessions, for the information and inspection of readers.

Another innovation has been to place all available sets of the Society's publications, including the rare Asiatic Researches, the Journals, Memoirs and the Bibliotheca Indica Series in steel almirahs on the landing on the western side of the staircase, on the first floor. On the landing outside the Arabic-Persian Room, the printed catalogues and reference books in Arabic and Persian have been placed for the convenience of readers.

Stock-taking.—In the Annual Reports of 1905 and 1918 there are references to the 'weeding out' of books, but there is no indication that this was done as a result of stock-taking. At the beginning of 1940, when the task of taking stock of the collections in the Library was undertaken, a serious difficulty was encountered owing to the absence of any accession register, or any properly kept catalogue, either in card or in book form. The existing catalogues are very defective and have not been kept up to date. Even with the index slips and the cards kept by the late Librarian, they fail to account for the whole of the books in the Library. Help therefore was sought from Mr. S. S. Saith, M.A. (Edin.), Superintendent of the Imperial Library, who advised that it was necessary to prepare first of all a register of all the books in the Library, shelf by shelf, according to their book marks or numbers and, after this was accomplished, to check it with the records kept in the form of catalogues, index-cards, etc. This advice was followed, a complete register of the books on our shelves was prepared; and by the end of November, the general section of the Library, containing 33,182 books, was checked. The results of the stock-taking so far completed show that:—

(i) 2,400 books had not been registered or catalogued. A complete list of these was prepared and included in the new register.

(ii) Over 200 books mentioned in the catalogues could not be traced. It is possible that some of these may be found among the bound volumes of periodicals not yet examined.

(iii) Books numbering nearly 6,000 were found to be damaged. No adequate preventive measures had been taken against the attack of insects and no regular or systematic dusting or cleaning of the books had been done.

(iv) A large mass of stray papers, book-covers, directories, catalogues of firms, civil lists and many odd volumes of books

and pamphlets were found, and with the help of G. Bhattacharya, B.A., the son of the First Pandit, who is working as an apprentice in the Library of the Society, these were carefully examined and sorted. Those likely to be of use were kept, and the most important removed to the Library and entered in the register. A list of the others was prepared, and a Committee was appointed by the Council to examine and report as to which should be preserved. The rest were sold by auction along with those found in the Stock Rooms.

A list of the books most severely damaged was made, and it was found that over 6,500 books require to be repaired and rebound, out of which 114 volumes which needed immediate attention were repaired at a cost of Rs.761. Estimates for the cost of repairing the others were obtained, but as the sum required was considerable it was decided to use the amount sanctioned in repairing and rebinding the old valuable books. This work is in addition to the repairing and binding of costly and rare works on Art, Architecture and Science which was completed within this year at a total cost of about Rs.6,000. These works have been placed in specially made steel almirahs in the south room.

Sanskrit Section.—All the manuscripts in this section, comprising works in Sanskrit, Prakrit, Bengali and other Indian languages belonging to the Society, or on permanent loan from the Government of India, were placed in steel cupboards in the north-west room on the first floor, after being properly cleaned and classified. The manuscripts were thoroughly checked and a list of the missing ones was prepared and enquiries made for their recovery. It was found that 7,234 MSS. were damaged by insects and mildew, of which 144 were in very bad condition. These were taken in hand first and altogether 261 were repaired during the year.

Arabic-Persian Section.—Similarly in this section all the MSS., numbering over 6,000, were carefully checked. A list was prepared and it was found that 2,039 were damaged, 56 of which were in a very bad state of preservation. These were repaired and rebound. The old wooden racks and almirahs were dismantled and steel shelves erected. The collection was moved temporarily into the north room on the ground floor, but will be shifted to the Arabic-Persian room on the first floor, properly classified, and placed in steel cupboards when additional doors have been fixed.

Sino-Tibetan Section.—The manuscripts and printed works comprised in this section were carefully checked and, after being properly labelled, were arranged in steel shelves, according to the Tibetan alphabetical order. A complete register of the

collection was made by Mr. Trin Chen and a descriptive catalogue of the Buddhist Kangyur and Tangyur manuscripts is in preparation.

It was found that 398 volumes in this Section were badly eaten by insects.

Repair of Manuscripts.—The repair of the most valuable and severely damaged MSS. in the Sanskrit and Arabic-Persian Sections was done at a cost of Rs.1,202-6-9. The technique of repair was determined on the advice of experts in India and abroad, and the work was done by employing special duftries to whom the necessary materials were supplied. The total cost of repair of the rest of the damaged MSS. in the Sanskrit, Islamic and Sino-Tibetan Sections will be very large and cannot be undertaken at once. It is proposed therefore to divide the work into two or three stages according to the condition of the MSS. and the funds available. The estimated cost of repairing the 414 MSS. which need urgent attention (of which 195 belong to the Sanskrit, 80 to the Islamic and 39 to the Sino-Tibetan Sections) is Rs.2,524, and this expense cannot be postponed much longer without incurring serious damage to the MSS. Besides cleaning and dusting, measures were taken to prevent any further damage by insects. On the advice of Mr. A. R. Foster of the Imperial Chemical Industries Co., who very kindly examined our damaged MSS. and books, a preparation of paradichlor-benzene is being used as a disinfectant.

Enforcement of Regulations.—Measures were taken to enforce the Library Regulations more strictly so as to guard against any further loss of books; and the hours were extended from 5 p.m. to 7 p.m. The Library is now kept open on all days excepting those mentioned in the Regulations. These reforms were initiated with a view to increase the utility of the Library.

Permanent Library Endowment Fund.—The total of this fund is now Rs. 14,020 in 3½% Government Paper.

Accessions and presentations.—The accessions, exclusive of 209 periodicals received either by way of exchange, presentation or purchase, numbered 393 volumes, of which 136 were purchased, 117 were presented and the remaining 136 volumes were added to the Library from unregistered stock.

Owing to the war, publications from European countries were received with difficulty. There are 66 institutions in Europe alone, excepting the British Isles, which exchange publications with the Society, most of which have either stopped sending or are able to send only a few publications at long

intervals. Five new Indian periodicals were added to the Library. They are: (1) 'Annals of the Oriental Research Department of the Madras University', presented by the University, (2) 'New Asia', presented by Dr. Kalidas Nag, (3) 'Transactions of the Bose Research Institute', presented by the Institute, (4) The 'Bharatiya Vidya', and (5) the 'Journal of Indian Entomology',—the last two by exchange for the Society's Journal.

Among books presented to the Society, mention may be made of 'Ajanta', Vols. 1 to 4, from H.E.H. the Nizam of Hyderabad, and 'Monuments of Sanchi', Vols. I to III, and 'Excavations at Harappa', Vols. I and II, from the Government of India.

Besides the presentation of books the Society has received during the year a Photo Record Micro-film Copying Camera, complete with reostat weston exposure meter, extra foot pedal and lens, K-1 and K-2 yellow filters, a film winder and one hundred feet of micro-film from Dr. Horace I. Poleman, Director of Indic Studies, Library of Congress, Washington, U.S.A., on permanent loan for copying MSS. and other valuable records. Arrangements have been made with the consent and co-operation of the Director of the Zoological Survey of India to keep it in safe custody for the Society in the photographic room of the Zoological Survey of India. The Society is greatly indebted to Dr. Poleman and the Photo Record Micro-film Co. of America for the loan of this valuable and costly apparatus which will undoubtedly be of great service to the Society and scholars who want exact copies of MSS. to be made at a very moderate cost.

Orders were sent for 38 books recommended for purchase by the Library Committee, but on account of difficulties of communication they have not yet arrived from England and America.

Book Review.—As a result of the publication of Book Reviews in the Society's Journal, requests are being received regularly from authors for review of their works, and 13 books were presented to the Library.

Finance.

Appendix III contains the usual Statements showing our accounts for 1940. Certain changes have been made in the form of their presentation according to the recommendations of the Special Enquiry Committee.

The Building Fund and the Building Repair Fund have been amalgamated as shown in Statement No. 15. The Statement showing the account of the International Catalogue of Scientific Literature, London, has been closed and the balance of Rs.4,374-7-8 is being held temporarily in the General Fund, to be transferred to the Temporary Reserve later. The other Statements are presented as in the previous year.

The Fund Accounts show their invested assets written down to their market value as at the end of the year and Investment Account No. 22 shows the allocation of invested paper to each fund specifically, with both market and face values of the investments.

Statement No. 24 shows the Balance Sheet and the different funds administered by and through it.

The funds belonging to, or administered by, the Society are classified as follows:—

- (a) General Fund:—
 - (i) Permanent Reserve.
 - (ii) Working Balance.
- (b) Specific Funds belonging to the Society.
- (c) Funds administered by the Society.

At the end of the year, the position of these funds was as follows:—

	Face value, 31st December 1940. Rs.	Market value, 31st December 1940. Rs.
1. General Fund	2,98,200	2,83,000
(a) Permanent Reserve	2,54,200	2,39,000
(b) Working Balance	44,000	44,000
2. Specific Funds belonging to the Society ..	25,500	24,600
3. Funds administered by the Society ..	69,600	68,200
	<u>3,93,300</u>	<u>3,75,800</u>

During the year 1940 Rs.1,040 were received as admission fees and Rs.680 as compounding fees. This total amount of Rs.1,720 will be transferred to the Permanent Reserve by conversion of Government Paper (3½%) belonging to the Temporary Reserve.

The Government of Bengal maintained the 20% cut in all grants made by them to the Society during the year.

The Society received the following grants from the above Government :—

For			Rs.	Statement.
Journals .. ..	..	..	1,600	No. 1.
O.P. Fund No. 1 .. ..	..	..	7,200	No. 2.
Sanskrit MSS. .. ..	..	..	8,000	No. 4.

The Government of Bengal grant of Rs.2,400 for the publication of works of historical interest for the year 1940-41 has not yet been received.

Owing to increasing activity and the clearing up of arrears in the publications of the Society, a large number of works was published. The resultant heavy outlay on printing, binding, and editing fees increased the debit balance of the Oriental Publication Fund No. 2 (Statement No. 3) from Rs.3,144-15-1 in 1939 to Rs.11,084-15-10 at the end of the year. Special efforts will be made to reduce this debit.

The Government of India maintained the 50% cut in the grant for Arabic and Persian MSS. (Statement No. 5) and as a result the Fund closed with a debit balance of Rs.3,141-3-3.

The income derived from Advertising amounted to Rs.10,200.

The temporary investments of funds in Fixed Deposit and Savings Bank are shown in Statements Nos. 21 and 20.

Statement No. 18 gives an account of the amounts due to and by the Society for membership subscriptions, sales of publications and contingent charges.

The Government Securities shown in Statement No. 22 are held in safe custody by the Imperial Bank of India, Park Street Branch. During the year there was a considerable appreciation in the value of the securities, amounting to Rs.17,749-15-0 and increasing to that extent the book assets of the Society.

The Budget estimates for 1940 and the actuals of the year were as follows :—

Estimates.			Receipts.	Expenditure.
			Rs.	Rs.
Ordinary .. ..	..	..	52,030	44,500
Extraordinary .. ..	..	..	650	650
TOTAL ..			52,680	45,150
Actuals.				
Ordinary .. ..	..	..	82,508	64,884
Extraordinary .. ..	..	..	1,624	1,624
TOTAL ..			84,132	66,508

The ordinary receipts were about Rs.30,478 more than the estimate.

The ordinary expenditure was about Rs.20,384 more than the estimate.

The Budget estimates of probable expenditure have, as usual, been framed to meet demands under various heads based on a vigorous activity in all departments of the Society's work.

The receipts have been conservatively estimated.

BUDGET ESTIMATE FOR 1941.

Ordinary Receipts.

	Original Budget Estimate for 1940.	Actuals for 1940.	Budget Estimate for 1941.
	Rs.	Rs.	Rs.
Interest on Investments and	10,000	9,959	9,800
Deposits	750	750	750
Advertising	10,200	10,200	10,200
Rent	10,680	10,680	10,680
Annual Grant	1,600	1,600	1,600
Miscellaneous	300	2,700	300
Members' Subscriptions	9,000	8,800	9,000
Publication, Sales and Subscriptions	5,000	5,200	5,500
Donation .. .. .	..	500	..
Proportionate Share of Funds:—			
1. O. P. Fund No. 1	2,500	2,500	2,000
2. Sanskrit MSS. Fund	2,000	2,000	2,000
3. Sanskrit MSS. Fund .. .. .	..	8,000*	..
4. Building Fund .. .. .	..	10,000*	..
5. Publication Fund .. .. .	..	5,245*	..
6. International Cat. of Scientific Literature Fund .. .. .	..	4,374-7-8*	..
TOTAL	52,030	82,508-7-8	51,830

* Special sanction by Council.

Extraordinary Receipts.

	Rs.	Rs.	Rs.
By Fees			
by Admission Fees	650	944	800
by Compounding Fee .. .. .	..	680	..
by Institutional Membership Registration Fee .. .. .	..	..	..
TOTAL	650	1,624	800

Ordinary Expenditure.

	Original Budget Estimate for 1940.	Actuals for 1940.	Budget Estimate for 1941.
	Rs.	Rs.	Rs.
Salaries	22,500	22,625	21,800
Commission	300	280	300
Stationery	550	1,050*	600
Fan, Light and Telephone	700	672	600
Taxes	2,400	2,388	2,400
Postage	1,200	2,693*	1,600
Contingencies	750	1,098*	700
Petty Repairs	150	179	200
Insurance	500	500	500
Menials' Clothing	200	270	120
Office Furniture	500	488	200
Building Repairs	2,000	2,000	2,000
Provident Fund Share •	800	642	700
Audit Fee	250	250	250
Books, Library	3,000	1,334	2,000
Binding, Library	1,000	761	2,000
Journal and Memoirs	7,000	9,055*	7,000
Printing Circulars, etc.	700	891*	500
Gratuities .. ..	..	1,000	..
Contribution .. ..	..	..	..
Cataloguing Bengali MSS. .. ..	..	..	500
Steel Shelving .. ..	..	12,473*	6,560
TOTAL	44,500	64,884	50,530

* Special sanction by Council.

Extraordinary Expenditure.

	Rs.	Rs.	Rs.
To Permanent Reserve			
by Admission Fees	650	944	800
by Compounding Fees .. ..	..	680	..
by Institutional Membership Registration Fees .. ..	..	..	..
TOTAL	650	1,624	800

Publications.

The Special Enquiry Committee appointed in 1939 prepared a list of papers and works undertaken by the Society but not published. The names of these papers and works are given in *Annexures A and B* and printed in the Annual Report of the Society for 1939. In the course of that year the *Journal* of the Society was brought up to 1938, and *Vol. IV* was completed with its Title-pages, Indexes, etc. Similarly the *Year-Book* of the Society up to 1938 was published. During the current year

(1940) the complete Volume of the Journal for 1939 (Vol. V), consisting of 754 pages and 3 plates was published, as well as two numbers for 1940 (Vol. VI)—one Science and one Letters—consisting of 110 pages and 6 plates.

The *Year-Book* for 1939 (Vol. VI, 1940—pages 208) was issued in the early part of 1940. It is to be noted that this is the first time in the recent history of the Society that the Proceedings of the Society were published and distributed to Members along with the Journal for the year just ended.

Of the papers mentioned in *Annexures A and B* and lying in the press for many years, two were published in Vol. V of the Journal, the remainder in Vol. IV except Nos. 3 and 4 of *Annexure A*, which were rejected on further reference, and No. 1 in *Annexure B* which could not be sent to the Press till recently, no response having been received from the author.

Of the *Memoirs*, No. 1 of *Annexure B*, viz., the late Dr. P. O. Bodding's work on 'How the Santals Live' was published, thus completing Vol. X of the *Memoirs*.

The Society has published also an important new work on 'The Pugnacity of the Swordfish, etc.,' by Dr. E. W. Gudger and consisting of 100 pages and 9 plates as Vol. XII of the *Memoirs*.

Considerable progress has been made in the revised edition of the *Mahāvīyutpatti* by Alexander Csoma de Körös which is to form Vol. IV of the *Memoirs* (No. 2 of *Annexure B*) but has been lying uncompleted since 1910. Most of the materials left by Csoma de Körös have been re-copied and revised by Mr. Trin Chen and Prof. Durga Charan Chatterjee.

Bibliotheca Indica Series.—Of the eighteen incomplete works mentioned by the Special Enquiry Committee in the last Annual Report nine were published in 1939. During the year 1940 the following works were published:

- (1) *Varna-ratnākara*.—The oldest work in the Maithili language, written by Kaviśekharācārya Jyotirīśvara Thakkura (c. 1325 A.D.), and edited by Prof. Suniti K. Chatterji and Pandit Babua Misra. The work consists of Introductions, pp. 1-lxiv+1-8, a Plate of the MS., and Text and Index, pp. 1-166.
- (2) *Dharma-bindu*.—A work on Jaina Philosophy by Hari-bhadra, edited with the commentary of Muncandra by Dr. L. Suali, Ph.D., and partly revised and seen through the press by Prof. Chintaharan Chakravarti, M.A. Fascicle I was published in 1912. The printing of Fascicle II, the major portion of which was seen by Dr. Suali in 1921, was entrusted to Prof. Chakravarti last year in the absence of Dr. Suali. This final fascicle consists of pp. 81-271 of the Text and Preliminary, and Glossary, pp. i-xi.

- (3) *Avadāna-kalpalatā*.—A reprinted edition of Vol. I, Fascicle II, pages 59–154, originally published under the joint editorship of Sarat Ch. Das and Pandit Hari Mohan Vidyabhushana. The task of seeing the proofs through the press was done by Prof. Durga Charan Chatterjee. The Fascicle consists of pp. 59–154 of the Text and Preliminary pp. i–iv and Appendixes I and II of 1–10 pages.

In addition, progress made in the following works mentioned in *Annexures A and B* is shown below :

- (1) *Tīrtha-kalpa*, edited by Pandit Kedarnath of Jaipur.—Pages 97–288 have been printed and pp. 289–338 are in page-form. Fifty pages remain to be made press-ready. With the completion of these, including the Index, the work can be issued next year.
- (2) *Vaikhāṇasa-Śrauta-sūtram*.—Prof. Raghu Vira of Lahore, who was entrusted with the preparation of the Index has seen the galley proofs through the press. With the printing of the Index, which will occupy nearly 100 pages, the complete work can be published early in 1941.
- (3) *Kuṭṭanī-matam*.—During the middle of the year permission was obtained from the Kashmir Government for Pandit Madhusudan Kaul Sastri, M.A., Superintendent, Archaeology and Research Department of that Government, to edit and complete this work, which, it is expected, will also be published in 1941.
- (4) *Kesar Saga*.—Dr. S. K. Chatterji is now working on the final fascicle. He has included a number of connected Sagas and other matters from the *Indian Antiquary* and other sources, originally compiled and translated by the Rev. A. H. Francke, as a useful appendix. These have been set up in type, and the work will be published next year.
- (5) *Dowazangmo*.—A number of mistakes were found in the first 32 pages that were printed in 1932. The Council decided to stop the work for the present, distribute the type, and undertake the work at a later date when reliable MS. material becomes available.
- (6) *Vajjalaggam*.—Mr. Johan van Manen undertook to complete the English translation but has not done so as yet.

In the Islamic Section the following works were published:—

- (1) *The Index to Tabaqāt-i-Akbarī, Vol. III*.—The Index to the Third Volume of the English Translation

of the *Tabaqāt-i-Akbarī* of Khwājah Nizāmuddīn Ahmad by Dr. Baini Prashad, D.Sc., F.R.A.S.B. It consists of pages 817–921 set up in small type and double column.

- (2) *Qānūn-i-Humāyūnī* (Persian Text).—Also known as *Humāyūn-Nāma* of Khwāndamīr, a work on the Rules and Ordinances established by the Emperor Humāyūn, and on some buildings erected by his order, was edited with notes and a Preface in English by Shamsu-l-'Ulamā Dr. M. Hidayat Hosain, Ph.D., F.R.A.S.B. The work consists of pp. i–xxxvi in English and pp. 1–141 in Persian.
- (3) *Qānūn-i-Humāyūnī*.—The English translation of the above work with Explanatory Notes, Preface and Index by Dr. Baini Prashad, D.Sc., F.R.A.S.B., F.N.I., F.R.S.E. The work consists of Preliminary pp. i–xii and pp. 1–92 Translation and Index.

Progress as indicated below was made in the uncompleted Islamic works mentioned in *Annexures A and B*. :—

- (1) '*Amal-i-Ṣāliḥ* or *Shāh-Jahān-Nāma*.—The Persian text was completed in 1939 by Prof. G. Yazdani. The Index of the three Volumes is in course of preparation by the editor and the entire work is expected to be published in 1941.
- (2) *Tarikh-i-Humāyūnī* of Bāyazīd : Persian : is in course of completion and will be published in 1941.
- (3) *Haft Iqlīm*.—The preparation of materials for Vol. II in Persian by Prof. M. Mahfuz-ul Haq is well advanced and is expected to be press-ready in 1941.

Among new works published were :—

- (1) *Doctrine of Nimbārka*.—Translation of 'Vedānta-pārijāta-Saurabha' of Nimbārka and 'Vedānta-kaustubha' of Śrīnivāsa (commentaries on the Brahma-Sūtras), Vol. I, by Dr. Roma Bose, M.A., D.Phil. (Oxon), was published earlier in the year. It consists of Preliminary, pp. i–viii and Translation, pp. 1–474.
- (2) *Lushai-English Dictionary*.—The Dictionary of the Lushai Language—the first dictionary of the language of a tribal group inhabiting parts of the wild forest-covered mountainous region between India and Upper Burma, and prepared by the Revd. James Herbert Lorrain of the Baptist Missionary Society, London, and one of the pioneer Missionaries.

in the Lushai Hills. It consists of Preliminary pp. i-xvi and Vocabulary, pp. 1-576.

Of new works undertaken by the Society in the Bibliotheca Indica Series, progress was made as follows:—

- (1) *Doctrine of Nimbārka*, Vols. II and III, by Dr. Rama Bose.—Since the publication of Vol. I, 200 pages of Vol. II have been printed and the rest are in various stages of proof. It is expected to publish Vols. II and III in 1941.
- (2) *Bhagavad-Gītā (in Persian Verse)*.—The materials are in course of preparation by Dr. Baini Prashad.
- (3) *Maāthiru-l-Umarā (English Translation)*.—Materials left by the late H. Beveridge, I.C.S (Retd.), are being edited and revised by Dr. Baini Prashad.

Sanskrit Catalogue.—

- (1) Volume VIII, Part II, Descriptive Catalogue of the Government Collection of Sanskrit MSS. on loan to the Society, dealing with the subject of *Tantra*, prepared by the late MM. Haraprasad Shastri, C.I.E., D.Litt., F.A.S.B., and revised and edited by Prof. Chintaharan Chakravarti, M.A., consisting of pp. 609-892 (including Index) and pp. i-xxx of Prefatory matter, was published during the year.
- (2) Volume IX of the Descriptive Catalogue of Sanskrit MSS., prepared by the late MM. Haraprasad Shastri, and dealing with *Philosophy*, is being revised and checked and is expected to be published in 1941.

Arabic Catalogue.—

- (3) Volume II of the Descriptive Catalogue of the Arabic MSS., dealing with the subjects of *Asceticism and Ethics, History, Biography, Cosmography and Geography, Logic, Philosophy, Mathematics, Astronomy, Alchemy, Cabalistic works* (works on spirits, incantations, secret virtues of letters, names of God and constructions of magical squares) and *Interpretations of Dreams* is in preparation by Dr. M. Hidayat Hosain.

The Bibliotheca Indica Committee, appointed last year, held its first meeting on July 22nd under the presidency of Sir Jadunath Sarkar. In view of heavy demands made on the resources of the Society for publishing a large number of works lying in the press in various stages of proof for many years past, it was resolved to proceed with uncompleted works already undertaken before accepting any new work. Accordingly, a list was prepared of 43 works in Sanskrit, and 8 works in Arabic and Persian, showing how much was already printed, what

remained to be done, and whether any have been published elsewhere in the meantime either completely or partially.

Economies.—In view of the increased cost of printing as a result of the war attempts were made to effect economy without impairing the excellence of the printing. Savings were made to the extent of 33½%, and 30–50% respectively, by arranging for binding to be done on the Society's premises, and blocks to be prepared directly by firms selected for the purpose, and notices of meetings, lectures, etc., were printed at approximately 40% less cost.

Instructions to Authors.—In order to avoid delay and unnecessary trouble and expense, caused by the receipt of papers not properly press-ready, instructions were prepared by Drs. Baini Prashad and S. K. Chatterji, suitable for both scientific and literary productions, giving full directions for submission of papers for the Society's Journal and Memoirs. These instructions have been printed and are being issued with each number of the Journal and Memoirs.

With regard to literary and scientific publications no efforts were spared to maintain the general standard. The Society published a large number of papers by distinguished scholars and scientists including two from Sir Aurel Stein and Dr. E. W. Gudger; communications also were received at the monthly meetings on matters of considerable importance by such authorities as Prof. Herré of the Stanford University. The satisfaction expressed by Sir Aurel Stein and Dr. Gudger for the promptitude and care with which their papers were published, will no doubt encourage all who worked so strenuously during the past year for the restoration of the Society's reputation.

The Baptist Mission Press.

Under the capable superintendence of Mr. P. Knight the Baptist Mission Press continued to act as our chief printers and gave, as usual, their invaluable assistance.

Agencies.

Our European, American and Indian Agents remain the same. An extension of the list for Asiatic countries could not be made as desired owing to unsettled conditions in most of the countries.

Exchanges of Publications.

The following applications for exchanges with the Society's publications were considered by the Council, and its decisions are noted below :—

*Publications of :**To be exchanged with :*

Bharatiya Vidya, Bombay ..	Journal.
Deccan College Research Institute, Poona (Bulletin) ..	Journal.
Research Dept., D.A.V. College, Lahore	Bibliotheca Indica works of equal value.
Visva-Bharati, Santiniketan (including Tagore's works in Bengali)	Memoirs.
Bangiya Sahitya Parisat .	Sanskrit, Hindi, other Indian vernaculars and Tibetan works in the Bibliotheca Indica Series.
Sanskrit Sahitya Parisat ..	Sanskrit Texts in the Bibliotheca Indica Series.

The list of institutions with which exchanges of publications are made has been placed before a sub-committee for revision.

• **Meetings.**

The Ordinary Monthly Meetings of the Society were held regularly with the exception of January and the recess months of September and October. The average attendance was 14 members and 4 visitors. The maximum attendance was in December with 17 members and 9 visitors.

There were no meetings of the Medical Section.

Exhibits.

At the Ordinary Monthly Meetings exhibits were shown and commented upon by the exhibitors. The following may be mentioned:—

- Percy Brown: A note on (a) Two old Japanese 'How-to-Draw' books, and
(b) An old Japanese book on repeating patterns for textiles such as brocades, etc.

Dr. B. S. Guha: Three Tibetan Manuscripts.

Chintaharan Chakravarti: Manuscripts in the Society's collection of Sanskrit Works of Maharaja Visvanath Singh of Rewah.

Communications.

Apart from papers, communications on matters of considerable scholarly and scientific interests were made from time to time at the Ordinary Monthly Meetings.

Among such communications the following may be mentioned:—

Mrs. E. W. E. Macfarlane: Mother and Child Combinations of Blood Groups and Blood Types in Calcutta.

J. N. Mukherjee: A note on solubility and dissociation constant of stearic acid by N. P. Dutta.

Chintaharan Chakravarti: Study of Manuscripts.

M. Hidayat Hossain: European Physicians and Surgeons in the Moghul Court; a note on the ruins of Masjidkur and Amadi; and a note on a very rare and richly ornamented MS. called Chingiz Nama.

J. C. De: Pearls and the East India Company (1600 to 1661).

Albert W. C. T. Herré: Fisheries Development in the East.

General Lectures.

The following General Lectures were delivered before fairly large audiences of members and visitors:—

February 16th. Dr. Meghnad Saha: Physics in Medicine.

March 18th .. Dr. C. S. Fox: The Progress of Search for Minerals in India.

March 29th .. Bt.-Col. R. N. Chopra: Use of Hemp Drugs in India.

April 2nd .. P. Kodanda Rao: Eastern and Western Civilization—a Denial of Contrast.

July 31st .. Dr. H. I. Poleman: America and Indic Studies.

Philology.

Two papers read in the previous year were published.

Two papers were read and published during the year.

History.

Two papers read in the previous year were published.

Five papers were read and published during the year.

Anthropology.

Three papers read in the previous year were published.

Eight papers were read and published during the year.

Archaeology.

Two papers were read and published during the year.

Two papers were read during the year and will be published later.

Natural History : Zoology.

Two papers read in the previous year were published.

Four papers were read and published during the year.

Natural History : Botany.

One paper read in the previous year was published.

One paper was read and published during the year.

Mathematics.

One paper was read during the year to be published later.

Cultural Activities.

Apart from general lectures, activity was shown in several directions aimed at increasing the usefulness of the Society as a great cultural institution. In the month of August permission was given to the Modern Society of Art to hold its exhibition of Paintings and Sculptures in a room on the ground floor.

Advice and help were given to investigators from many places in India, and abroad, of whom the following may be mentioned:—

(1) Major M. F. C. Martin, R.E., (an old Member) was supplied with a note on the Chaleolithic Period in Baluchistan and the Near East, and a bibliography of work done.

(2) Mille. R. B. Cachio with a translation of a letter received from Helsinki.

(3) Mr. R. Genge, a member, on behalf of Messrs. D. J. Keymer & Co., with a detailed note on the use of sandal-oil and sandalwood in ancient India.

(4) Miss Wheelwright from U.S.A. with information on alleged similarities in folk-tales between the Tibetan and the Red Indian tribes of America.

(5) Principal A. C. Dutt of the Bareilly College, Bareilly, with information on the 'Hamsadatakayar', regarding its author and its place in Sanskrit literature.

(6) Request was made by the Registrar of the Calcutta High Court for help in assessing the value of the many historical documents in the possession of the Court. Dr. U. N. Ghosal examined them on behalf of the Society and his report was sent to the Registrar.

(7) Mr. Harmuz Kans of Hyderabad asked for information on the use of 'Ameer-ul-Hind' relating to Nawab Azam Jah Bahadur on old China. Prof. M. Haq supplied the necessary details.

(8) The Chief Secretary of Suket State was supplied with information on the Sena Kings of Bengal.

(9) His Majesty's Trade Commissioner at Calcutta with information regarding the interpretation of certain symbols used as trade marks.

In addition, Mr. Sarojbhusan Barua, M.A., a research scholar of the Government of Bengal, has been carrying on researches in Buddhistic literature under the supervision of the Society's experts for over a year.

Solicitors.

The Society is under obligation to its Solicitors, Messrs. B. N. Basu & Co., for prompt and valuable service rendered during the

year. To the head of the firm, Mr. J. N. Basu, it is specially indebted for his courtesy and ungrudging help on all occasions when there was any need to consult him.

Desiderata.

From the foregoing review of work it will be seen that a considerable part of the reorganization of the Society has been effected. What remains to be done includes routine matters on which work has already commenced and other improvements which require large capital outlay and cannot be carried out without addition to our already much reduced resources.

Our successful efforts to wipe off the large arrears of publication have resulted in the quick depletion of our Funds available for publication, one of which, namely, the O.P. Fund No. 2 has closed with a debit balance of Rs.11,000 in 1940. Unless the Government grants are restored in full, no further work in Arabic and Persian can be undertaken in the near future. Similarly, the repair and rebinding of damaged MSS. and books during 1939-40, has cost the Society large sums, and all future work in this direction will be very severely restricted unless our resources are considerably implemented. The restoration of some of our paintings, adequate insurance of all our properties, and the provision of a modern fire-proof building cannot be shelved much longer. With the advice and help of Dr. John B. Grant, the Director of the All-India Institute of Hygiene, the Rockefeller Foundation of New York was asked for a donation of four lacs of rupees but under the present War conditions the Foundation did not find it possible to accede to our request.

In Europe and America, institutions like ours benefit by generous help from big firms and philanthropists. The Royal Asiatic Society, which has, since the time of Sir William Jones, helped and encouraged research in all departments of Art and Science, has not been equally fortunate. Is it too much for the Council to hope that philanthropists and rich well-wishers, among whom there must be many who enjoy the privileges of its membership, will, by generous financial assistance, help the Society to maintain and increase its activities in the cause of learning and research?

[APPENDIX I.]

Membership Statistics.

(As calculated for December 31st, for 30 years.)

YEAR.	ORDINARY.							EXTRA-ORDINARY.					FELLOWS.			
	PAYING.				NON-PAYING.			Total Ordinary Members.	Centenary Honorary.	Associate.	Institutional.	Anniversary Honorary.	Total.	Grand Total Membership.	Honorary.	Ordinary.
	Resident.	Non-Resident.	Foreign.	Total.	Absent.	Life.	Total.									
1911 ..	200	225	19	444	53	22	75	519	3	14	..	..	17	536	28	19
1912 ..	203	229	19	451	43	23	66	517	3	13	..	..	16	533	27	24
1913 ..	200	211	19	430	46	23	69	499	3	14	..	..	17	516	27	28
1914 ..	191	187	19	397	50	26	76	473	3	14	..	..	17	490	24	27
1915 ..	171	188	21	380	40	25	65	445	3	15	..	..	18	463	29	31
1916 ..	145	159	18	322	60	25	85	407	3	15	..	..	18	425	26	33
1917 ..	150	144	15	309	45	24	69	378	2	12	..	..	14	392	22	35
1918 ..	153	145	17	315	43	24	67	382	2	10	..	..	12	394	22	39
1919 ..	141	128	15	284	64	25	89	373	2	11	..	..	13	386	18	36
1920 ..	161	134	15	310	32	26	58	368	2	11	..	..	13	381	28	38
1921 ..	160	132	16	308	26	26	51	359	2	12	..	..	14	373	28	40
1922 ..	160	141	16	317	26	26	52	369	2	13	..	..	15	384	30	39
1923 ..	147	120	13	280	30	27	57	337	2	11	..	..	13	350	28	37
1924 ..	209	134	12	355	29	28	57	412	2	12	..	..	14	426	27	37
1925 ..	263	137	12	412	23	27	50	462	2	12	..	..	14	476	26	34
1926 ..	319	162	20	501	23	28	51	552	2	12	..	..	14	566	25	34
1927 ..	328	167	18	513	28	33	61	574	2	13	..	..	15	589	28	38
1928 ..	344	167	23	534	42	46	88	622	1	12	..	..	13	635	28	40
1929 ..	331	181	21	533	36	49	85	618	1	10	2	..	13	631	27	43
1930 ..	291	194	37	522	22	52	74	596	1	8	2	..	11	607	29	47
1931 ..	228	184	29	441	26	52	78	519	1	8	5	..	14	533	29	46
1932 ..	222	126	23	371	27	54	81	452	1	7	5	..	13	465	28	45
1933 ..	194	126	27	347	33	56	89	436	..	7	6	..	13	449	26	49
1934 ..	217	112	30	359	26	57	83	442	..	6	7	12	25	467	26	47
1935 ..	206	107	28	341	28	56	84	425	..	5	7	11	23	448	24	44
1936 ..	214	106	24	344	16	55	71	415	..	5	10	11	26	441	21	46
1937 ..	205	99	29	333	20	55	75	408	..	5	12	10	27	435	19	49
1938 ..	193	98	21	312	24	54	78	390	..	4	12	10	26	416	19	45
1939 ..	187	103	21	311	21	54	75	386	..	6	12	10	28	414	22	46
1940 ..	190	108	18	316	14	57	71	387	..	7	12	10	29	416	21	49

[APPENDIX II.]

List of Publications issued by the Royal Asiatic Society of Bengal during 1940.**(a) Bibliotheca Indica :**

	Price.		
	Rs.	As.	P.
<i>I. Indian Works :</i>			
1. Doctrine of Nimbārka, English Translation, Vol. I	6	4	0
2. Lushai-English Dictionary, complete work ..	18	0	0
3. Varṇa-ratnākara, complete work ..	5	0	0
4. Dharma-bindu, Vol. I, Fascicle 2, concluding fascicle	3	4	0
5. Avadāna-kalpalatā, Vol. I, Fascicle 2 (Reprint)	3	0	0
<i>II. Islamic Work :</i>			
6. Qānūn-i-Humāyūnī, complete work ..	3	0	0
7. Qānūn-i-Humāyūnī, English Translation, complete work	4	0	0
8. Ṭabaqāt-i-Akbarī, English Translation, Vol. III, Part III, Index, concluding part ..	2	8	0

(b) Journal and Proceedings (Third Series) :

Vol. V (Letters) No. 1	7	8	0
" " " " 2	6	8	0
" " " " 3	2	8	0
" " (Science) No. 1	2	4	0
" " " " 2	1	8	0
" VI (Letters) No. 1	3	8	0
" " (Science) No. 1	3	8	0
" " Year-Book	4	14	0
Title-pages and Indexes to Volumes IV and V (Free to Members and subscribers).			

(c) Memoirs :

Vol. X, No. 3: How the Santals Live ..	7	0	0
Vol. XII, No. 2: The Alleged Pugnacity of the Swordfish and the Spearfishes as shown by their attacks on Vessels	7	14	0

(d) Miscellaneous :

Descriptive Catalogue of Sanskrit Manuscripts in the Collection of the Royal Asiatic Society of Bengal, Vol. VIII, Tantra, Part II ..	7	8	0
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Abstract Statement
of
Receipts and Disbursements
of the
Royal Asiatic Society of Bengal
for
the Year 1940

STATEMENT No. 1.

1940.

General

Income and Expenditure Account

		Rs.	As.	P.	Rs.	As.	P.
To ESTABLISHMENT :							
Salaries and Allowances ..	..	22,632	4	9			
Commission ..	..	277	2	0			
					22,909	6	9
GENERAL EXPENDITURE							
Stationery ..	..	1,046	9	3			
Fans and Light ..	..	356	15	0			
Telephone ..	..	324	13	0			
Taxes ..	..	2,387	5	0			
Postage ..	..	2,243	11	9			
Contingencies ..	..	1,118	5	6			
Printing Circulars, etc. ..	..	1,804	6	6			
Audit Fee ..	..	250	0	0			
Petty Repairs ..	..	225	5	6			
Insurance ..	..	500	0	0			
Menials' Clothing ..	..	100	0	0			
Furniture and Repairs ..	..	513	10	0			
Interest on Security Deposit ..	..	5	0	0			
					10,376	1	6
GRATUITIES ..	..				1,000	0	0
LIBRARY AND COLLECTIONS :							
Books ..	..	1,266	1	9			
Binding ..	..	3,213	2	0			
					4,479	3	9
STEEL SHELVEING ..	..				15,967	0	0
PUBLICATIONS :							
Journal and Proceedings ..	..				7,738	3	6
CONTRIBUTION :							
Provident Fund for 1940 ..	..				642	0	0
					63,111	15	6
TRANSFER TO—							
Building Repair Fund Account ..	..				2,000	0	0
SUNDRY ADJUSTMENTS :							
Bad Debts written-off ..	..				1,175	0	0
BALANCE AS PER BALANCE SHEET ..	..				2,83,041	8	10

3,49,328 8 4

STATEMENT No. 1.

Fund.

1940.

for the year to 31st December, 1940.

	Rs.	As.	P.	Rs.	As.	P.
BY BALANCE FROM LAST ACCOUNT			2,50,988	6	6

CASH RECEIPTS :

Interest on Investments ..	..	9,958	14	11		
Interest on Fixed Deposits..	..	750	0	0		
Government Grant ..	..	1,800	0	0		
Advertising ..	..	10,200	0	0		
Rent ..	..	10,305	0	0		
Donation ..	..	500	0	0		
Miscellaneous ..	..	2,844	4	0		
					36,158	2 11

PERSONAL ACCOUNT :

Members' Subscriptions ..	..	9,839	0	0		
Admission Fees ..	..	1,040	0	0		
Compounding Fees ..	..	680	0	0		
Sundry Adjustments ..	..	460	4	0		
Publications ..	..	5,185	12	3		
					17,205	0 3

TRANSFER FROM FUNDS :

Sanskrit MSS. Fund ..	..	8,000	0	0		
Building Repair Fund ..	..	10,000	0	0		
International Catalogue of Scientific Literature ..	..	4,374	7	8		
Proportionate Share in General Expenditure—						
Oriental Publication Fund (1) ..	..	2,500	0	0		
Sanskrit MSS. Fund ..	..	2,000	0	0		
					26,874	7 8
Appreciation on Investments—						
Revalued on 31-12-1940 ..	..	17,749	15	0		
Appreciation on Transfer to Provident Fund ..	..	352	8	0		
					18,102	7 0

3,49,328 8 4

STATEMENT No. 2.

1940.

Oriental Publication

From a monthly grant made by the Government of Bengal for the publication (Rs. 500), and for the publication of Sanskrit
(Less 20% from the

	Rs.	As.	P.
To Printing	8,592	11	6
Editing	310	0	0
Binding	417	8	0
Proportionate Share in General Expenditure ..	2,500	0	0
Balance as per Balance Sheet	12,148	8	8
	23,968	7	2

STATEMENT No. 3.

1940.

Oriental Publication

From an annual grant made by the Government of Bengal of
Historical
(Less 20% from the

	Rs.	As.	P.
To Balance from last Account	3,144	15	1
Printing	6,347	12	3
Editing	1,013	12	6
Binding	578	8	0
	11,084	15	10

STATEMENT No. 4.

1940.

Sanskrit Manuscripts Fund

From an annual grant of Rs. 3,200 made by the Government of Bengal
by the Society; and Rs. 3,600 from the
(Less 20% from the

	Rs.	As.	P.
To Cataloguing	1,200	0	0
Binding	200	0	0
Printing	2,020	15	6
Purchase of books	20	12	0
Repairs to Mss.	1,202	6	9
Transfer to General Fund R.A.S.B.	8,000	0	0
Proportionate Share in General Expenditure	2,000	0	0
Balance as per Balance Sheet	18,179	15	0
	32,824	1	3

STATEMENT No. 2.

Fund No. 1, in Account with R.A.S.B.

1940.

ation of Oriental Works and Works of Instruction in Eastern Languages
Works hitherto unpublished (Rs. 250).
1st of April, 1932.)

			Rs.	As.	P.
By Balance from last Account	..	..	16,768	7	2
Annual Grant ..	..	..	7,200	0	0
			23,968	7	2

STATEMENT No. 3.

Fund No. 2, in Account with R.A.S.B.

1940.

Rs. 3,000 for the publication of Arabic and Persian Works of
Interest.
1st of April, 1932.)

			Rs.	As.	P.
By Balance as per Balance Sheet	..	..	11,084	15	10
			11,084	15	10

STATEMENT No. 4.

Account, in Account with R.A.S.B.

1940.

for the publication of the Catalogue of Sanskrit Manuscripts acquired
same Government for Research Work.
1st of April, 1932.)

			Rs.	As.	P.
By Balance from last Account	..	..	24,824	1	3
Annual Grant ..	..	..	8,000	0	0
			32,824	1	3

STATEMENT No. 5.

1940.

Arabic and Persian Manuscripts

From an annual grant of Rs. 5,000 made by the Government of India for
by the Society; for the purchase of further Manuscripts,
Manuscripts found in

	Rs.	As.	P.	Rs.	As.	P.
To Balance from last Account..		1,417	1	3
Purchase of Manuscripts		70	0	0
Reference Works		254	8	0
Cataloguing		2,100	0	0
Binding		419	4	0
Printing		1,380	6	0
				5,641	3	3

STATEMENT No. 6.

1940.

Barclay Memorial

From a sum of Rs. 500 odd given in 1896 by the Surgeon
encouragement of Medical

	Rs.	As.	P.	Rs.	As.	P.
To Cost of a Medal ..	..	....		19	2	0
Balance as per Balance Sheet—						
Rs. 700, 3½% G.P. Notes, 1854-55	658	7	0			
Surplus at date ..	77	6	8			
				735	13	8
				754	15	8

STATEMENT No. 7.

1940.

Servants' Pension Fund

Founded in 1876 as the Piddington Pension Fund

	Rs.	As.	P.	Rs.	As.	P.
To Pension ..	..	....		132	0	0
Balance as per Balance Sheet—						
Rs. 3,000, 3½% G.P. Notes, 1854-55	2,821	14	0			
Surplus at date ..	838	2	8			
				3,660	0	8
				3,792	0	8

STATEMENT No. 5.

Fund Account, in Account with R.A.S.B.

1940.

the cataloguing and binding of Arabic and Persian Manuscripts, acquired and for the preparation of notices of Arabic and Persian various Libraries in India.

	Rs.	As.	P.	Rs.	As.	P.
By Annual Grant	2,500	0	0
Balance as per Balance Sheet	3,141	3	3
				5,641	3	3

STATEMENT No. 6.

Fund Account, in Account with R.A.S.B.

1940.

General, I.M.S., for the foundation of a medal for the and Biological Science.

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Account	685	10	8
Interest realized during the year	24	4	0
Appreciation on Investments revalued on 31-12-1940	45	1	0
				754	15	8

STATEMENT No. 7.

Account, in Account with R.A.S.B.

1940.

with Rs. 500 odd from the Piddington Fund.

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Account	3,494	2	8
Interest realized during the year	104	12	0
Appreciation on Investments revalued on 31-12-1940	193	2	0
				3,792	0	8

STATEMENT No. 8.

1940.

Annandale Memorial Fund

From donations by subscription,

	Rs. As. P.	Rs. As. P.
To Cost of a Medal .. .. .	....	221 8 0
Balance as per Balance Sheet—		
Rs. 4,000, 3½% G.P. Notes, 1854-55	3,762 8 0	
Surplus at date	624 4 9	
	<hr/>	4,386 12 9
		<hr/>
		4,608 4 9
		<hr/>

STATEMENT No. 9.

1940.

Permanent Library Endowment

From gifts received,

	Rs. As. P.	Rs. As. P.
To Balance as per Balance Sheet—		
Rs. 14,000, 3½% G.P. Notes, 1854-55	13,168 12 0	
Surplus at date	2,737 7 8	
	<hr/>	15,906 3 8
		<hr/>
		15,906 3 8
		<hr/>

STATEMENT No. 10.

1940.

Sir William Jones Memorial

From a sum gifted for the purpose in

	Rs. As. P.	Rs. As. P.
To Balance as per Balance Sheet—		
Rs. 3,000, 3½% G.P. Notes, 1854-55	2,821 14 0	
Surplus at date	253 15 0	
	<hr/>	3,075 13 0
		<hr/>
		3,075 13 0
		<hr/>

STATEMENT No. 8.

Account, in Account with R.A.S.B.

1940.

started in 1926.

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Account			4,212	4	9
Interest realized during the year			138	8	0
Appreciation on Investments revalued on 31-12-1940			257	8	0
				<u>4,608</u>	<u>4</u>	<u>9</u>

STATEMENT No. 9.

Fund Account, in Account with R.A.S.B.

1940.

started in 1926.

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Account			14,495	15	8
Interest realized during the year			489	0	0
Donation			20	0	0
Appreciation on Investments revalued on 31-12-1940			901	4	0
				<u>15,906</u>	<u>3</u>	<u>8</u>

STATEMENT No. 10.

Fund Account, in Account with R.A.S.B.

1940.

1926, by Dr. U. N. Brahmachari.

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Account			2,777	15	0
Interest realized during the year			104	12	0
Appreciation on Investments revalued on 31-12-1940			193	2	0
				<u>3,075</u>	<u>13</u>	<u>0</u>

STATEMENT No. 11.

1940.

Pramathanath Bose Memorial

From a sum gifted for

	Rs. As. P.	Rs. As. P.
To Balance as per Balance Sheet—		
Rs. 800, 3½% G.P. Notes, 1842-43 }	1,693 2 0	
" 1,000, " " 1865 }	313 5 0	
Surplus at date		2,006 7 0
		<u>2,006 7 0</u>

STATEMENT No. 12.

1940.

Joy Gobind Law Memorial

From a donation for the purpose

	Rs. As. P.	Rs. As. P.
To Balance as per Balance Sheet—		
Rs. 3,000, 3½% G.P. Notes, 1854-55	2,821 14 0	
Surplus at date	209 0 0	
		3,030 14 0
		<u>3,030 14 0</u>

STATEMENT No. 13.

1940.

Calcutta Science Congress Prize

	Rs. As. P.	Rs. As. P.
To Balance as per Balance Sheet—		
Rs. 3,000, 3½% G.P. Notes, 1854-55	2,821 14 0	
Surplus at date	1,187 10 7	
		4,009 8 7
		<u>4,009 8 7</u>

1941]

Receipts and Disbursements.

69

STATEMENT No. 11.*Fund Account, in Account with R.A.S.B.***1940.**

the purpose in 1935.

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Account		1,838	7	0
Interest realized during the year		52	2	0
Appreciation on Investments revalued on 31-12-1940		115	14	0
				<hr/>	<hr/>	<hr/>
				2,006	7	0

STATEMENT No. 12.*Fund Account, in Account with R.A.S.B.***1940**

in 1929, by Dr. Satya Churn Law.

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Account		2,733	0	0
Interest realized during the year			104	12	0
Appreciation on Investments revalued on 31-12-1940		193	2	0
				<hr/>	<hr/>	<hr/>
				3,030	14	0

STATEMENT No. 13.*Fund Account, in Account with R.A.S.B.***1940.**

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Account		3,711	10	7
Interest realized during the year		104	12	0
Appreciation on Investments revalued on 31 12-1940		193	2	0
				<hr/>	<hr/>	<hr/>
				4,009	8	7

STATEMENT No. 14.

1940.

Dr. Brühl Memorial

From a sum gifted for the purpose in

	Rs.	As.	P.	Rs.	As.	P.
To Balance as per Balance Sheet—						
Rs. 1,000, 3½% G.P. Notes 1854-55	940	10	0			
Surplus at date	151	7	0			
				1,092	1	0
				1,092	1	0

STATEMENT No. 15.

1940.

Building Repair

	Rs.	As.	P.	Rs.	As.	P.
To Transfer to General Fund			10,000	0	0
Balance as per Balance Sheet			4,317	3	0
				14,317	3	0

STATEMENT No. 16.

1940.

Provident Fund

From contributions by the

	Rs.	As.	P.	Rs.	As.	P.
To Payments during the year ..	....			150	0	0
Balance as per Balance Sheet—						
Rs. 5,000, 3% G.P. Notes, 1941	5,065	10	0			
Rs. 6,000, 3½% G.P. Notes, 1900-01	5,643	12	0			
Savings Bank and Advances ..	5,130	15	0			
				15,840	5	0
				15,990	5	0

STATEMENT No. 14.

Fund Account, in Account with R.A.S.B.

1940.

1929, by the Brühl Farewell Committee.

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Account			992	15	0
Interest realized during the year			34	12	0
Appreciation on Investments revalued on 31-12-1940			64	6	0
				<u>1,092</u>	<u>1</u>	<u>0</u>

STATEMENT No. 15.

Fund Account, in Account with R.A.S.B.

1940.

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Account			5,995	9	6
Balance from Building Fund Account			6,321	9	6
Transfer from R.A.S.B. General Fund			2,000	0	0
				<u>14,317</u>	<u>3</u>	<u>0</u>

STATEMENT No. 16.

Account, in Account with R.A.S.B.

1940.

Society and its Staff.

	Rs.	As.	P.	Rs.	As.	P.
By Balance from last Account ..	....			14,330	6	11
Interest realized during the year ..	13	2	0			
Staff Contribution for the year ..	642	0	0			
Society's Contribution for the year ..	642	0	0			
				<u>1,297</u>	<u>2</u>	<u>0</u>
Interest realized from Savings Bank ..	....			810	4	1
Appreciation on Investments revalued on 31-12-1940 .. ..	....			52	8	0
				<u>15,990</u>	<u>5</u>	<u>0</u>

STATEMENT No. 17.

1940.

Advances Account,

		Rs.	As.	P.	Rs.	As.	P.
To Balance from last Account			1,895	0	0
Payments during the year			2,215	0	0
					<u>4,110</u>	<u>0</u>	<u>0</u>

STATEMENT No. 18.

1940.

Personal

		Rs.	As.	P.	Rs.	As.	P.
To Balance from last Account	..	....			3,852	13	9
Advances	..	....			2,619	0	3
R.A.S.B.'s Subscriptions, etc.	..	12,019	4	0			
Book sales, etc	..	5,185	12	3			
					<u>17,205</u>	<u>0</u>	<u>3</u>

23,676 14 3

STATEMENT No. 19.

1940.

Publication Fund Account,

		Rs.	As.	P.	Rs.	As.	P.
To Books returned, etc.			26	3	0
Special Binding (Plate books)			1,710	0	0
Printing, Journal and Memoirs			2,196	12	3
Balance as per Balance Sheet			4,403	15	0
					<u>8,336</u>	<u>14</u>	<u>3</u>

1941]

Receipts and Disbursements.

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STATEMENT No. 17.*in Account with R.A.S.B.***1940.**

		Rs.	As.	P.	Rs.	As.	P.
By Refunds during the year			1,635	0	0
Balance as per Balance Sheet			2,475	0	0
					<u>4,110</u>	<u>0</u>	<u>0</u>

STATEMENT No. 18.*Account.***1940.**

		Rs.	As.	P.	Rs.	As.	P.
By Cash Receipts during the year			18,208	4	0
Books returned			28	3	0
Bad Debts written off, R.A.S.B.			1,175	0	0
Balance as per Balance Sheet			4,267	7	3

Outstandings.	Amount due to the Society.			Amount due by the Society.		
	Rs.	As.	P.	Rs.	As.	P.
Members	8,268	11	0	468	14	6
Subscribers, etc.	72	0	0	24	0	0
Bill Collector's Deposit	...	...	...	100	0	0
Miscellaneous	1,537	12	8	18	1	6
	<u>4,873</u>	<u>7</u>	<u>8</u>	<u>606</u>	<u>0</u>	<u>0</u>

23,676 14 3**STATEMENT No. 19.***in Account with R.A.S.B.***1940.**

		Rs.	As.	P.	Rs.	As.	P.
By Balance from last Account			7,824	8	6
Cash Sale of Publications			512	5	9

8,336 14 3

STATEMENT No. 20.

1940.

(1) Deposit Account (*Savings Bank*)

	Rs. As. P.	Rs. As. P.
To Balance from last Account ..	....	1,380 10 11
Deposit of Interest realized from loans during the year ..	13 2 0	
Deposit of Contributions during the year	1,291 14 0	
Deposit of Advances returned ..	1,635 0 0	
Transfer from Current Account ..	390 0 0	
	<hr/>	3,330 0 0
Interest for the year ..	....	310 4 1
		<hr/>
		5,020 15 0
		<hr/>

STATEMENT No. 21.

1940.

(2) Deposit Account (*Fixed Deposit*)

	Rs. As. P.	Rs. As. P.
To Balance from last Account	50,000 0 0
Deposit during the year	10,000 0 0
		<hr/>
		60,000 0 0
		<hr/>

STATEMENT No. 20.*Deposit with Imperial Bank of India).***1940.**

	Rs.	As.	P.	Rs.	As.	P.
By Withdrawal for Staff Advances, etc.			2,385	0	0
Balance as per Balance Sheet			2,655	15	0

 5,020 15 0

STATEMENT No. 21.*with Imperial Bank of India).***1940.**

	Rs.	As.	P.	Rs.	As.	P.
By Withdrawal during the year			20,000	0	0
Balance as per Balance Sheet			40,000	0	0
				60,000	0	0

STATEMENT No. 22.

1940.

(3) Investments

	Rs. As. P.
To Balance from last Account	2,91,062 4 0
Appreciation on Investments revalued on 31-12-1940	19,959 0 0
Appreciation on Transfer to Provident Fund	352 8 0
	<u>3,11,373 12 0</u>

Face Value Rs.	FUNDS.	Rate @ Rs. %	31st December, 1940, Valua- tion.	31st December, 1939, Valua- tion or cost.	Apprecia- tion
			Rs. A. P.	Rs. A. P.	Rs. A. P.
	ROYAL ASIATIC SOCIETY OF BENGAL.				
	PERMANENT RESERVE.				
16,700	3½% G. P. Notes, 1842-48				
1,53,700	3½% G. P. Notes, 1854-55				
44,900	3½% G. P. Notes, 1865				
6,000	3½% G. P. Notes, 1879				
88,000	3½% G. P. Notes, 1900-01				
2,53,700			2,88,636	9 0	2,22,304
500	8% G. P. Notes, 1896-97	94/1- 80/14/-	404	6 0	378
	TEMPORARY RESERVE.				
12,000	3½% G. P. Notes, 1900-01	94/1/-	11,287	8 0	10,515
11,400	4½% Loan, 1955-60	112/8/-	12,825	0 0	12,205
	BARCLAY MEMORIAL FUND.				
700	3½% G. P. Notes, 1854-55	94/1/-	658	7 0	618
	SERVANTS' PENSION FUND.				
8,000	3½% G. P. Notes, 1854-55	94/1/-	2,821	14 0	2,628
	ANNANDALE MEMORIAL FUND.				
4,000	3½% G. P. Notes, 1854-55	94/1/-	3,762	8 0	3,505
	PERMANENT LIBRARY ENDOWMENT FUND.				
14,000	3½% G. P. Notes, 1854-55	94/1/-	13,168	12 0	12,267
	SIR WILLIAM JONES MEMORIAL FUND.				
8,000	3½% G. P. Notes, 1854-55	94/1/-	2,821	14 0	2,628
	PRAMATHANATH BOSE MEMORIAL FUND.				
800	3½% G. P. Notes, 1842-43				
1,000	3½% G. P. Notes, 1865	94/1/-	1,698	2 0	1,577
	JOY GOBIND LAW MEMORIAL FUND.				
8,000	3½% G. P. Notes, 1854-55	94/1/-	2,821	14 0	2,628
	CALCUTTA SCIENCE CONGRESS PRIZE FUND.				
8,000	3½% G. P. Notes, 1854-55	94/1/-	2,821	14 0	2,628
	DR. BRÜHL MEMORIAL FUND.				
1,000	3½% G. P. Notes, 1854-55	94/1/-	940	10 0	876
	PROVIDENT FUND.				
5,000	8% Loan, 1941	101/5/-	5,035	10 0	5,046
6,000	3½% G. P. Notes, 1900-01	94/1/-	5,648	12 0	5,310
8,92,100			8,05,378	12 0	2,55,414
					19,959
					00

STATEMENT No. 23.

1940.

Cash

For the year ended 31st

To	Rs. As. P.	Rs. As. P.
Balance from last Account	13,616 13 4
General Fund Account	36,158 2 11
Oriental Publication Fund No. 1 Account	7,200 0 0
Sanskrit Manuscripts Fund Account	8,000 0 0
Arabic and Persian Manuscripts Fund Account	2,500 0 0
Barclay Memorial Fund Account	24 4 0
Servants' Pension Fund Account	104 12 0
Annandale Memorial Fund Account	138 8 0
Permanent Library Endowment Fund Account	509 0 0
Sir William Jones Memorial Fund Account	104 12 0
Joy Gobind Law Memorial Fund Account	104 12 0
Calcutta Science Congress Prize Fund Account	104 12 0
Dr. Brühl Memorial Fund Account	34 12 0
Pramathanath Bose Memorial Fund Account	52 2 0
Provident Fund Account	1,297 2 0
Advances Account	1,635 0 0
Personal Account	18,208 4 0
Publication Fund Account	512 5 9
Savings Bank Deposit Account, Imperial Bank of India, Calcutta	2,365 0 0
Fixed Deposit Account, Imperial Bank of India, Calcutta	20,000 0 0
Investments Account	6,000 0 0
		<hr/>
		1,18,670 6 0

STATEMENT No. 23.

Account.

1940.

December, 1940.

By	Rs. As. P.	Rs. As. P.
General Fund Account	83,111 15 6
Oriental Publication Fund No. 1 Account..	9,320 3 6
Oriental Publication Fund No. 2 Account..	7,940 0 9
Sanskrit Manuscripts Fund Account	4,644 2 3
Arabic and Persian Manuscripts Fund Account	4,224 2 0
Barclay Memorial Fund Account	19 2 0
Servants' Pension Fund Account	132 0 0
Annandale Memorial Fund Account	221 8 0
Provident Fund Account	150 0 0
Advances Account	2,215 0 0
Personal Account	2,619 0 3
Publication Fund Account	3,906 12 3
Savings Bank Deposit Account, Imperial Bank of India	3,330 0 0
Fixed Deposit Account, Imperial Bank of India	10,000 0 0
Balance as per Balance Sheet—		
In hand	14 8 6
With the Imperial Bank of India, on Current Account	6,821 15 0

1,18,670 6 0

STATEMENT No. 24.

1940.

Balance

As at 31st

LIABILITIES.

	Rs. As. P.	Rs. As. P.
General Fund Account	2,83,041 8 10
Oriental Publication Fund No. 1 Account	12,148 3 8
Sanskrit Manuscripts Fund Account	18,179 15 0
Barclay Memorial Fund Account	735 13 8
Servants' Pension Fund Account	3,660 0 8
Annandale Memorial Fund Account	4,386 12 9
Permanent Library Endowment Fund Account	15,906 3 8
Sir William Jones Memorial Fund Account	3,075 13 0
Pramathanath Bose Memorial Fund Account	2,006 7 0
Joy Gobind Law Memorial Fund Account	3,030 14 0
Calcutta Science Congress Prize Fund Account	4,009 8 7
Dr. Brühl Memorial Fund Account	1,092 1 0
Building Repair Fund Account	4,317 3 0
Provident Fund Account	15,840 5 0
Publication Fund Account	4,403 15 0
Personal Account—Sundry Liabilities	606 0 0
		<hr/>
		3,76,440 12 10

We have examined the above Balance Sheet and the appended detailed accounts with the Books and Vouchers presented to us and certify that they are in accordance therewith, and, in our opinion, set forth correctly the position of the Society as at 31st December, 1940.

PRICE, WATERHOUSE, PEAT & Co.,

Calcutta,
27th January, 1941.

Auditors,
Chartered Accountants,
Registered Accountants.

STATEMENT No. 24.

Sheet.

1940.

December, 1940.

ASSETS.

	Rs.	As.	P.	Rs.	As.	P.
Oriental Publication Fund No. 2 Account	11,084	15	10			
Arabic and Persian Manuscripts Fund Account	3,141	3	3	14,226	3	1
Advances Account	2,475	0	0			
Personal Account—Sundry Outstandings ..	4,878	7	3	7,348	7	3
Deposits:—						
Savings Bank Deposit Account, Imperial Bank of India	2,655	15	0			
Fixed Deposit Account, Imperial Bank of India	40,000	0	0	42,655	15	0
Investments Account .. .. .	....			3,05,373	12	0
Cash Account:—						
In hand	14	8	6			
With the Imperial Bank of India, on Current Account	6,821	15	0	6,836	7	6
				3,76,440	12	10

BAINI PRASHAD,
Honorary Treasurer.

[APPENDIX IV.]

Abstract Proceedings Council, 1940.

(Rule 48 f.)

ACCOMMODATION—

Letter of thanks from the Honorary Secretary, Mining, Geological and Metallurgical Institute of India, for the use of the Society's rooms on the occasion of the last Annual General Meeting of the Institute. Record.

No. 7.

29-1-40.

A letter from the Modern Society to hold an Art Exhibition in one of the Society's rooms (downstairs) in which pictures of historical interest will be on view. Offer a room to them on the ground floor provided that the Society incurs no liability or expenses as a result of the exhibition.

No. 2.

29-7-40.

Letter dated 24-10-40 from the Honorary Secretary, Mining, Geological and Metallurgical Institute of India requesting the use of the Society's Hall for their Annual Meeting on Friday, the 10th January, 1941. Record.

No. 20.

29-11-40.

ANNUAL MEETING—

Consideration of the Annual Report for 1939. Proposed by Mr. Percy Brown, seconded by Dr. J. N. Mukherjee that the Annual Report, as amended, be adopted. Carried unanimously.

Special.

17-1-40.

Annual Meeting. Record.

No. 13.

29-1-40.

Provision for loud-speaker for the Annual Meeting. Resolved that the General Secretary arrange for the loan of the loud-speaker from the Calcutta University and that incidental expenses incurred thereby shall be borne by the Society.

No. 15.

29-1-40.

Letter D.O. No. 4134G dated 12-12-40 from the Private Secretary to His Excellency the Governor of Bengal expressing the inability of His Excellency to be present and preside over the Annual Meeting of the Society. President to personally approach His Excellency on the subject after the holidays.

No. 22.

20-12-40.

ARTISTIC POSSESSIONS—

Letter dated 23-8-40 from Mr. K. C. Roy, sculptor, offering to undertake the execution either in marble or in bronze plate of the plaster of Paris plaque of Sir William Jones translating Sakuntala at a cost of Rs.400 or Rs.150 respectively. Request Maharaja Sir Pradyot Coomarr Tagore for a donation to execute a marble statue.

No. 25.

27-8-40.

Letter from Maharaja Sir Pradyot Coomar Tagore dated 27th September 1940 in reply to the General Secretary's request to bear the cost of the Paris plaster plaque of Sir William Jones translating the Abhinanaskuntalam, executed in marble. Record.

No. 9.

27-11-40.

BIBLIOTHECA INDICA—

Recommendation Publication Committee No. 2 of 23-1-40. Letter from Prof. Chintaharan Chakravarti offering to complete Bibliotheca Indica work on 'Dharmabindu'. Accept the offer at the customary lower rate of remuneration. Accepted by Council.

No. 11.

29-1-40.

Recommendation Publication Committee No. 3 of 23-1-40. Letter from Trin Chen offering to complete the Bibliotheca Indica work on 'Dowazangmo' by Mr. Karma Paul. Accept at the customary lower rate of remuneration. A specimen of Mr. Trin Chen's work should be reviewed by a Tibetan scholar. Accepted by Council.

No. 11.

29-1-40.

Recommendation Publication Committee No. 5 of 23-1-40. Standardization of the size of our Bibliotheca Indica publications. Standardize to 4to. and 8vo. only. Accepted by Council.

No. 11.

29-1-40.

Recommendation Publication Committee No. 6 of 23-1-40. Letter from Prof. Raghu Vira regarding remuneration for preparing Mantra Index to the Vaikhanasasrautasutra. Rs.120 to be paid as a special case. No mention of the International Academy of Indian Culture to be made in the prefatory note. Accepted by Council.

No. 11.

29-1-40.

Recommendation Publication Committee No. 2 of 23-2-40. Letter from Mr. K. S. Paul regarding revision of the Tibetan work on 'Dowazangmo'. Inform Mr. Paul that Mr. Trin Chen has been asked to do the work and trust that there will be no objection to this arrangement. Accepted by Council.

No. 13.

27-2-40.

Recommendation Publication Committee No. 3 of 23-2-40. New Work for Bibliotheca Indica Series by Dr. Roma Chaudhuri on 'Doctrine of Nimbarka'. Accepted by Council.

No. 13.

27-2-40.

Recommendation Publication Committee No. 2 of 22-4-40. Letter from the B. M. Press regarding the binding of Bibliotheca Indica works and the action taken thereon. Confirm General Secretary's action. Arrangements to be made for storage of the formes on the Society's premises. If required the works to be separately insured. Accepted by Council.

No. 10.

29-4-40.

Recommendation Publication Committee No. 3 of 22-4-40. Report on the Tibetan work 'Dowazangmo' in the Bibliotheca Indica Series. Work to be stopped and the type distributed. The MS. to be returned to the editor. The work may be undertaken at a later date when a competent editor and a reliable MS. are available. Accepted by Council.

No. 10.

29-4-40.

Recommendation Publication Committee No. 5 of 22-4-40. Request of Mr. A. G. Shirreff for permission to complete the translation of Malik Muhammad Jaisi's 'Padmavati', the text of which was published in the Bibliotheca Indica Series under the editorship of Sir George A. Grierson. Permission to be granted to Mr. Shirreff to complete the translation. The Benares edition of the work to be used for this purpose. A copy of this edition to be purchased by the Society. Accepted by Council.

No. 10.

29-4-40.

Extract from a letter from Rev. W. J. L. Wenger. Record. The General Secretary to approach the Government of Assam for a grant to meet the cost of publishing the Lushai-English Dictionary.

No. 14.

29-4-40.

Recommendation Bibliotheca Indica Committee No. 2 of 22-7-40. Application from Mr. Narendra Chandra Vedantatirtha with a letter of recommendation from the Philological Secretary, Dr. S. K. Chatterji, suggesting the undertaking of the publication in the Bibliotheca Indica Series of the English translation of Tattvacintamani and Sabdasakti-prakasika. Dr. S. K. Chatterji withdrew his recommendation in view of the Society's financial commitments. Accepted by Council.

No. 12.

27-8-40.

Recommendation Bibliotheca Indica Committee No. 3 of 22-7-40. A letter from the Philological Secretary, Dr. S. K. Chatterji, suggesting the publication of the remaining portion of the Tatparyaparisuddhi—the first part of which has already been published by the Society under the editorship of the late Lakshmana Sastri Dravida. Postpone consideration till a complete list of the Society's publications that are still incomplete be prepared. Accepted by Council.

No. 12.

27-8-40.

Recommendation Bibliotheca Indica Committee No. 4 of 22-7-40. Application from Dr. Mahdi Hosain of the Agra University with a letter of recommendation from Prof. M. Mahfuz-ul Haq, the Joint Philological Secretary, suggesting the importance of the publication of the English translation of Ibn Batuta's works. Postpone consideration till funds are available. Accepted by Council.

No. 12.

27-8-40.

Recommendation Bibliotheca Indica Committee No. 5(a) of 22-7-40. A letter from the Joint Philological Secretary, Prof. M. Mahfuz-ul Haq recommending the publication in the Bibliotheca Indica Series of Ta'rikh-i-Nusratjangi or a History of Dacca by Nawab Nasrat Jang, the Nawab of the City, 1817. Translated by Dr. M. I. Borah. The publication of the translation cannot be undertaken because of paucity of funds in Oriental Publication Fund No. 1. Accepted by Council.

No. 12.

27-8-40.

Recommendation Bibliotheca Indica Committee No. 5(b) of 22-7-40. A letter from the Joint Philological Secretary, Prof. M. Mahfuz-ul Haq, recommending the publication in the Bibliotheca Indica Series of the Futuhat-i-Firuz Shahi (the Victories of Sultan Firuz Shah), by N. B. Roy. Publish in the Journal of the Society. Accepted by Council.

No. 12.

27-8-40.

Recommendation Bibliotheca Indica Committee of 22-7-40. On the recommendation of Sir Jadunath Sarkar it was agreed that:

(a) A full list be prepared of works published or undertaken to be published by the Society, but which are incomplete, (b) The Committee examine the list and determine the priority of their publication, (c) In future not fasciculi but complete volumes be published, (d) Care be taken to publish only those portions of historical works which are of real value to the students interested in historical research, (e) Prof. Sarkar be requested to send a note on the list when it is prepared. Accepted by Council.

No. 12.

27-8-40.

Recommendation Publication Committee No. 5 of 21-8-40. Letter from Dr. S. K. Chatterji regarding Dr. A. H. Francke's work in the *Bibliotheca Indica* on 'Kesar Saga'. Accept Dr. Chatterji's suggestions. Accepted by Council.

No. 17.

27-8-40.

Letter from Mr. J. P. Mills, regretting the inability of the Assam Government to provide funds for the Lushai-English Dictionary which is being published by the Society. Record.

No. 24.

27-8-40.

Recommendations of the *Bibliotheca Indica* Committee of 22-7-40. Accept.

No. 12.

27-8-40.

A letter from the Honorary Secretary, Royal Asiatic Society, Bombay Branch, appreciating the presentation of 18 volumes of the *Bibliotheca Indica* Series. Record.

No. 8.

24-9-40.

The General Secretary informed the Council that Dr. M. Hidayat Hosain, who is preparing the Catalogue of the Arabic and Persian MSS., and receiving as honorarium Rs.200 per month for this work, has, in view of the poor financial position of the fund, agreed to accept only Rs.100 from October 1940 onwards. Resolved that the thanks of the Society be conveyed to him for his action.

No. 15.

24-9-40.

Consideration regarding incomplete printed formes of Manuscript. Report to the Committee appointed for consideration of the disposal of incomplete books, waste papers, etc.

No. 16.

27-11-40.

Letter dated 27-11-40 from Rev. W. J. L. Wenger requesting the Society to reduce the price of the Lushai-English Dictionary from Rs.18 to Rs.8 so that about 200 copies may be sold. Reduce the price to Rs.10 per copy if for orders of 100 copies or thereabout.

No. 3.

20-12-40.

BUDGET—

Letter from the Secretary to the Government of India, Department of Education, Health and Lands, regretting the inability of Government to restore the grant for Arabic and Persian MSS. to its original figure of Rs.5,000 during 1940-41. The position will, however, be reviewed in connection with the budget estimates for 1941-42. Record.

No. 20.

27-2-40.

Recommendation Special Finance Committee No. 1 of 20-3-40. Revised estimates, with notes thereon, for the year 1940. (a) That the amount to be paid for steel shelving in 1940 be met as under:

- (1) Sanskrit MSS. Fund—Rs.8,000.
- (2) Building Fund—Rs.10,000.
- (3) Balance from the General Fund.

(b) That the additional amounts required for the Journal and Memoirs, and Special Binding be met from the Publication Fund, (c) That the International Catalogue of Scientific Literature Account be closed and that the balance of Rs.4,374-7-8 be transferred to the Temporary Reserve. In the event of any future claim being made by the Royal Society it will be dealt with on its merits, (d) That the work on publications financed from Oriental Publication Fund No. 1 be slowed up so that works published may be paid for as funds are available. This Fund should not be allowed to run into debt, (e) That the work on publications financed from Oriental Publication Fund No. 2 be considerably retarded so that the Fund may again become solvent at as early a date as possible, (f) That a further representation be made to the Government of India after the commencement of the next financial year (1st April 1940) reiterating the need for restoration of the grant for Arabic and Persian MSS. to the original sum of Rs.5,000 per annum, (g) That the Treasurer shall endeavour to simplify the form in which the Accounts are now presented, by putting Medal and Memorial Funds, and by separating the Society's Funds from the Special Funds, (h) That no commitments of any kind shall be incurred without very careful consideration and without the definite report of the Treasurer that funds are available, (i) That the bulk of the annual issues of the Journal be reduced from 1940 from 1,200 pages to 800, (j) That a revised statement be prepared as early as possible by the Treasurer taking all these recommendations into consideration and that this revised statement be submitted to a special meeting of the Finance Committee for consideration, (k) That a general appeal be issued to Governments, to learned bodies, and to wealthy individual members and well-wishers for special donations for the Library to cover the cost of replacement of books, re-binding and repair of Manuscripts and books. Council order: Accept. The final recommendations of the Special Finance Committee to be circulated to members of Council.

No. 15.

27-3-40.

Recommendation Finance Committee No. 4 of 21-5-40. Regularization of amounts expended in excess of budget sanction and provision of fund for the remainder of the year 1940. Regularize the over expenditure of Rs.214-2-6 in the postage account and allot a further sum of Rs.1,350 to meet expenditure under postage for the remainder of the year. Accepted by Council.

No. 12.

27-5-40.

Recommendation Finance Committee No. 8 of 20-6-40. Regularization of amounts expended in excess of budget sanction and provision of funds for the remainder of the year, 1940. (1) Regularize the over expenditure of Rs.127-1-6 in the "Stationery" account and allot a further sum of Rs.322-14-6 to meet expenditure under this head for the rest of the year. (2) Allot Rs.350 to "Contingencies" account and Rs.200 to "Printing Circulars, Forms, etc." account to meet increased expenditure under these heads for the remainder of the year. Accepted by Council.

No. 9.

28-6-40.

Recommendation Special Finance Committee No. 1 of 16-12-40. Budget estimates for 1941. Unanimously recommend to Council

that the estimates as placed before the Committee be adopted. Accepted by Council.

No. 8.

20-12-40.

Recommendation Finance Committee No. 3(d) of 20-12-40. Budget estimates for 1941. Accepted by Council.

No. 9.

20-12-40.

BUILDING—

Provision of doors and nets of expanded metal for the stock rooms and 3 doors for the North-West Library downstairs along with estimates. Postpone consideration till January.

No. 23.

20-12-40.

COMMITTEES—

Outstanding items of the Special Enquiry Committee's (1939) recommendations. Resolved (1) that the Bibliotheca Indica Committee for 1940-41 be composed of

Dr. S. K. Chatterji,
Prof. M. Mahfuz-ul Haq,
Dr. B. C. Law,
Sir S. Radhakrishnan,
Sir Jadunath Sarkar,
Dr. M. Z. Siddiqi and the
Ex-Officio members,

(2) that Sir S. Radhakrishnan be appointed Additional Secretary for Philosophy, (3) that Dr. Kalidas Nag be appointed Additional Secretary for History and Archæology, (4) that the remaining items be considered after the deliberations of the special meeting of the Finance Committee referred to in Minute II.

No. 14.

27-2-40.

Constitution of Standing Committees of the Society for 1940-41. (a) Finance, (b) Library and (c) Publication. That the following shall constitute the Standing Committees of the Society for 1940-41 :—

(a) Finance Committee :

President	} <i>Ex-Officio.</i>
Treasurer	
General Secretary	
Dr. C. S. Fox.	
Dr. S. C. Law.	
Dr. Syamaprasad Mookerjee.	
Dr. J. N. Mukherjee and	
Major C. L. Pasricha.	

(b) Library Committee :

President	} <i>Ex-Officio.</i>
Treasurer	
General Secretary	

Philological	}	<i>Secretaries.</i>
Jt. Philological		
Biological		
Physical Science		
Anthropological		
Medical		
Library		
Philosophical		
Historical and Archæological		

(c) *Publication Committee :*

President	}	<i>Ex-Officio.</i>
Treasurer		
General Secretary	}	<i>Secretaries.</i>
Philological		
Jt. Philological		
Biological		
Physical Science		
Anthropological		
Medical		
Library		
Philosophical	}	
Historical and Archæological		

Further resolved that the Library and Publication Committees shall have power to co-opt.

No. 15.

27-2-40.

Letter dated 24-5-40 from Dr. S. Krishnaswami Aiyangar suggesting that the centenary of the deciphering of the Asoka inscriptions by James Prinsep should be suitably celebrated by the Society. Resolved that Dr. Kalidas Nag, Mr. H. C. Chakladar and Dr. B. S. Guha should form a sub-committee to consider publication of a special number of the Society's Journal in commemoration of the centenary of James Prinsep.

No. 1.

28-6-40.

On the motion of Dr. Kalidas Nag it was resolved that a sub-committee consisting of the following: Dr. Kalidas Nag, Major C. L. Pasricha, Col. R. N. Chopra, Mr. Percy Brown, Dr. C. S. Fox and Dr. B. S. Guha be requested to make the necessary arrangements and advise as to the most suitable method of expressing the Society's felicitations on the 80th birthday of Sir P. C. Ray, one of the most distinguished and oldest fellows of the Society, and Sir Nilratan Sircar, a well-known physician of Calcutta.

No. 12.

24-9-40.

Letter No. 596(5)-R.R. of 12-12-40 from the Government of Bengal together with enclosures asking the Society's suggestion in connection with the reorganization of the Indian Historical Records Commission. Appoint a special committee consisting of Dr. S. K. Chatterji, Mr. M. Mahfuz-ul Haq and the General Secretary to consider the matter.

No. 25.

20-12-40.

COUNCIL—

Vote of thanks to the outgoing members of Council. Resolved that the Council's thanks be conveyed to the outgoing members of Council.

No. 14.

29-1-40.

Acceptance of seat on Council by the Council Members. Record.
The Chairman extended a hearty welcome to the new members.

No. 1. 27-2-40.

Note on the classification of Council Circulars. Accept and Record.
No. 3. 27-3-40.

Letter from Mr. Percy Brown notifying his absence from Calcutta
for the months of April, May and June 1940. Record.

No. 15. 29-4-40.

Council meetings during recess months. No meetings to be convened
unless for special reasons.

No. 26. 27-8-40.

Letter from the Treasurer, R.A.S.B., dated 14th September 1940,
intimating his absence from Calcutta for three weeks from 16th Sep-
tember 1940. Record.

No. 9. 24-9-40.

Resolved that no meetings be held in October. "

No. 11. 24-9-40.

Intimation from the General Secretary that he will go out of Calcutta
in October. Record and request Dr. Baini Prashad to act as General
Secretary in addition to his own duties during the absence of Dr. B. S.
Guha.

No. 13. 24-9-40.

Informal consideration regarding composition of Council for 1941-42.

After discussion the following list of candidates for nomination to
next year's Council was placed before the meeting for consideration:—

President	..	..	The Hon'ble Mr. Justice John Lort-Williams, Kt., K.C.
Vice-President	..	..	Bt.-Col. R. N. Chopra.
"	"	..	Dr. C. S. Fox.
"	"	..	Dr. S. P. Mookerjee.
"	"	..	Sir S. Radhakrishnan.
General Secretary	..	..	Dr. B. S. Guha.
Treasurer	..	..	Dr. Baini Prashad.
Philological Secretary	..	..	Dr. S. K. Chatterji.
Jt. Philological Secretary	..	..	Mr. M. Mahfuz-ul Haq.
Nat. Hist. Secretary (Biology)	..	..	Dr. K. P. Biswas.
" " " (Phys. Science)	..	..	Dr. M. N. Saha.
Philosophical Secretary	..	..	Prof. Vanamali Vedantatirtha.
Anthropological Secretary	..	..	Mr. H. C. Chakladar.
Historical and Archæological Secretary	..	..	Dr. Kalidas Nag.
Medical Secretary	..	..	Major C. L. Pasricha.
Library Secretary	..	..	Dr. J. N. Mukherjee.
Member of Council	..	..	Dr. S. C. Law.
"	"	..	Dr. M. Z. Siddiqi.
"	"	..	Mr. C. W. Gurner.
"	"	..	The Hon'ble Mr. Justice N. G. A. Edgley.

Unanimously resolved that the General Secretary do print and circulate
to the members of the Council the list of the Council as at present
constituted, together with the new list placed before the meeting, and
provided with a blank column for additional names, and that these
lists be returned to the General Secretary within a week of the date

of issue, and that a list be compiled of the candidates finally proposed and be placed before the next Council meeting to be voted upon.

No. 2.

27-11-40.

Fixing date of the Council and Committee meetings for December 1940. The Council and the Committee meetings to meet on Friday, the 20th December 1940.

No. 7.

27-11-40.

Letter from the Treasurer of the Society dated 20-11-40 intimating his absence from Calcutta from 23-11-40 to 5-12-40. Record. The General Secretary to continue to act for him till 5-12-40.

No. 8.

27-11-40.

Council Nominations, 1941-42. Accept.

No. 4.

20-12-40.

DONATION—

Letter dated the 29th January, 1940, from Sir David Ezra, Kt., enclosing a cheque for Rs.500 as donation towards the renovation of the members' room of the Society. Accept with thanks. On the motion of the President it was resolved that this donation be utilized in any manner decided upon by the Council.

No. 20.

29-1-40.

EXCHANGE OF PUBLICATIONS—

Letter dated the 28th November, 1939, from Cambridge Philosophical Society regretting their inability to exchange their Journals with ours as requested by us in our letter No. 1492, dated the 2nd August, 1939. Record.

No. 3.

29-1-40.

Recommendation Library Committee No. 1 of 23-2-40. Requests for exchange of publications from the Editors, Bharatiya Vidya, Bombay, and Bulletin of the Deccan College, Research Institute, Poona. Exchange Journal only. Accepted by Council.

No. 12.

27-2-40.

Recommendation Library Committee No. 2 of 23-2-40. Request for exchange of publications from the Director, Research Dept., D.A.V. College, Lahore. Exchange Bibliotheca Indica works of equal value. Dr. S. K. Chatterji to select the volumes from their list which the Society needs. Accepted by Council.

No. 12.

27-2-40.

Recommendation Library Committee No. 11 of 23-2-40. Letter from the Librarian, Visva-Bharati, asking for (i) free replacement of a few missing parts of the Society's Journal and (ii) exchange of the Society's with those of the Visva-Bharati, including Rabindranath Tagore's works in Bengali. (i) That parts of the Journal that are available be issued free to complete their sets, (ii) that Memoirs only be exchanged for their publication. Accepted by Council.

No. 12.

27-2-40.

Exchange of publications with the University of Calcutta. A letter. to be sent to the Registrar of the University.

No. 20.

29-4-40.

Complete list of institutions with which exchanges of publications are made and also a complete list of institutions and individuals to whom free copies of the Society's Bibliotheca Indica Series are sent. A sub-committee consisting of Dr. J. N. Mukherjee, Dr. Kalidas Nag, Major C. L. Pasricha and the *ex-officio* members was appointed to review the lists, and to report to the Council.

No. 4.

29-4-40.

Recommendation Library Committee No. 1 of 21-5-40. Application for an exchange of publications from the Bangiya Sahitya Parishat, Calcutta. Exchange Sanskrit, Hindi and other Indian Vernacular and Tibetan works in the Bibliotheca Indica Series. Accepted by Council.

No. 13.

27-5-40.

Recommendation Library Committee No. 2 of 21-5-40. Application for an exchange of Sanskrit publications from the Sanskrit Sahitya Parishat, Calcutta. Exchange Sanskrit texts in the Bibliotheca Indica Series. Accepted by Council.

No. 13.

27-5-40.

Recommendation Library Committee No. 2 of 20-6-40. Application from the Stanford University Libraries requesting exchange of publications. Refer to the Committee appointed for revising the existing list of exchanges. Accepted by Council.

No. 10.

28-6-40.

Correspondence with the Research Office, Scientific and Industrial Research, Alipore, Calcutta, offering to present the publications of the department in exchange for the privilege of borrowing books from the Society's Library. Agree.

No. 1.

27-8-40.

Recommendations of the Exchange and Free-distribution Subcommittee of 21-8-40. Accept and Record.

No. 14.

27-8-40.

FINANCE—

Recommendation Finance Committee No. 2(a) of 23-1-40. The Auditors' (Messrs. Price, Waterhouse, Peat & Co.) Report on the Statement of Accounts for the year ended 31st December 1939. That the following action be taken:

Item 1.—Explain that the amounts actually received during the year on account of Advertising, Rent and Interest are recorded in the General Fund. Accrued items under these heads that have not actually been received are not shown.

Item 2.—*Oriental Publication Fund No. 1*

Explain as in Item 1.

Sanskrit Manuscripts Fund Account.

Explain that the grant from the Government of Bengal to this Fund is an annual one, and that the financial year of that Government is from the 1st April to the 31st March, whereas the Society's financial year is from the 1st January to the 31st December. In some years payment of the grant is received within our financial year and sometimes within the subsequent

year. The practice is to record it in the year's accounts in which it is actually received.

Item 3.—Action has been taken to have these amounts regularized.

Item 4.—Effect to be given to the suggestion.

Item 5.—Action has already been taken under the Rules in respect of Members' outstanding accounts.

The outstanding amounts on account of sales of books, etc., should be written off.

The suggestion regarding the total debits and credits shown in the Personal Account being recorded in the Balance Sheet as Sundry Assets and Liabilities should be adopted.

The investment of surpluses of capital funds should be made to the extent practicable.

A reply in the above sense to be sent to the auditors.

Accepted by Council.

No. 9.

29-1-40.

Recommendation Finance Committee No. 2(c) of 23-1-40. Re-investment of Fixed Deposit (Receipt No. A92583, dated 27-1-39) for Rs.10,000 which matures on 27-1-40. Re-invest. Accepted by Council.

No. 9.

29-1-40.

Recommendation Finance Committee No. 5 of 23-1-40. Regularization by the Council of the amounts spent under O.P. Fund No. 2 and Arabic and Persian MSS. Fund for 1939 resulting in those Funds closing with debit balances. Regularize extra expenditure sanctioned. Accepted by Council.

No. 9.

29-1-40.

Recommendation Finance Committee No. 2 of 27-2-40. 15 bills were submitted. Pay. The Honorary Treasurer drew attention to the low state of the current account after these payments have been made. Council order: Accept. A Special Meeting of the Finance Committee should be convened as early as possible to decide on items 5(b); 6, 9 and 10 of the minutes in question.

No. 11.

27-2-40.

Recommendation Finance Committee No. 3 of 27-2-40. Reinvestment of Fixed Deposit of Rs.6,000 (Fixed Deposit Receipt No. 04948) belonging to the Provident Fund which matures on 23-2-40. That the amount available be reinvested in other securities bearing a higher rate of interest on the advice of the Agent, Imperial Bank of India. Further recommended that, if for any reason the market value of such securities falls below the amount paid for them, the securities shall be taken over by the Society, and an amount equivalent to the original purchase price shall be reinvested by the Society for the benefit of the members of the Provident Fund. Council order: Accept. A Special Meeting of the Finance Committee should be convened as early as possible to decide on items 5(b); 6, 9 and 10 of the minutes in question.

No. 11.

27-2-40.

Recommendation Finance Committee No. 9 of 27-2-40. Letter from Dr. M. N. Saha regarding the provision of a modern epidiascope for lectures, etc. As for item 5(b). Council order: Accept. A Special Meeting of the Finance Committee should be convened as early as possible to decide on items 5(b), 6, 9 and 10 of the minutes in question.

No. 11.

27-2-40.

Recommendation Finance Committee No. 10 of 27-2-40. Review of items, involving expenditure, on which decisions have already been issued, or which require urgent consideration. As for item 5(b). Council order: Accept. A Special Meeting of the Finance Committee should be convened as early as possible to decide on items 5(b), 6, 9 and 10 of the minutes in question.

No. 11.

27-2-40.

Letter to the Agent, Imperial Bank of India, Park Street Branch, re virtual sale of securities held in the Temporary Reserve. Approve transfer of securities valued at Rs.6,000 from the Temporary Reserve to the Provident Fund and adjust the accounts in the terms of the letter.

No. 7.

27-3-40.

Recommendations of the Special Finance Committee of 20-3-40. Accept. The final recommendations of the Special Finance Committee to be circulated to members of the Council.

No. 15.

27-3-40.

Recommendation Finance Committee No. 3 (a) of 27-3-40. Re-investment of a Fixed Deposit (Receipt No. 04959) of Rs.10,000 with the Imperial Bank of India which will mature on 1st April 1940. Reinvest for 12 months. Accepted by Council.

No. 16.

27-3-40.

Recommendation Finance Committee No. 4 of 27-3-40. Advance given to Mr. J. R. Seal, Assistant Secretary, of Rs.350, *vide* his application dated 19-3-40. Sanction, but no further advance to be given until all outstandings have been repaid. Accepted by Council.

No. 16.

27-3-40.

Recommendation Finance Committee No. 4 of 22-4-40. Bill No. 633, dated the 19th April 1940, from Messrs. Bungo Steel Furniture Ltd. for supply of steel furniture . . . Rs.845. Pay Rs.434 in full. An advance proportionate payment may be made against the sum of Rs.2,792 as the goods have been supplied but the work of erecting is not yet completed. Accepted by Council.

No. 7.

29-4-40.

Report by the General Secretary on notices appearing in the Journal of the North China Branch of the Royal Asiatic Society. Record. The President to approach Imperial Chemical Industries (India) Ltd. for a donation to the Society.

No. 19.

29-4-40.

Recommendation Finance Committee No. 5 of 21-5-40. Report by the Treasurer on the available bank balance. Record. Payment of the bills of the Baptist Mission Press listed in minute 2(e), (f) and (g) to be deferred until June 1940. Accepted by Council.

No. 12.

27-5-40.

Recommendation Finance Committee No. 4 of 20-6-40. Consideration of renewal of a Fixed Deposit (Receipt No. 05041) of Rs.10,000 with the Imperial Bank of India, which will mature on 24th June 1940. Realize the Fixed Deposit when it matures, and transfer the sum to the Society's current account together with the interest accrued thereon. Accepted by Council.

No. 9.

28-6-40.

Recommendation Finance Committee No. 6 of 20-6-40. Application dated 5-6-40 from Duftry Abdul Razzak for a loan of Rs. 30 from the Society. Lend without interest. Accepted by Council.

No. 9.

28-6-40.

Recommendation Finance Committee No. 7 of 20-6-40. Application dated 14-6-40 from Pandit Aghore Nath Bhattacharyya for a loan of Rs.60 from the Society. Lend without interest. Accepted by Council.

No. 9.

28-6-40.

Letter from Rockefeller Foundation in reply to the request of the R.A.S.B. for donation. Record.

No. 3.

29-7-40.

Recommendation Finance Committee No. 3(b) of 22-7-40. Re-investment of a Fixed Deposit (Receipt No. 05108) of Rs.10,000 with the Imperial Bank of India, Park Street Branch, which will mature on 21st August, 1940. Transfer the amount together with the accrued interest to the current account of the Society. Accepted by Council.

No. 12.

29-7-40.

Recommendation Finance Committee No. 4 of 22-7-40. Payment made of a bill of Rs.5 received from the Accounts Officer, Telephone Revenue, Delhi, for a trunk telephone call put through from our telephone on 22nd May, 1940. Enquire from Mr. J. R. Seal if he can throw any light on the matter. Accepted by Council.

No. 12.

29-7-40.

Recommendation Finance Committee No. 2 of 21-8-40. Seven bills were submitted. Pay. Approach the Corporation of Calcutta for exemption of the Society's premises from payment of rates and taxes. Accepted by Council.

No. 15.

27-8-40.

Letter from Dr. D. R. Stevens in reply to the Society's request for the financial support from the Rockefeller Foundation. Record and convey thanks to Dr. Grant.

No. 23.

27-8-40.

Fixing date of the Special Finance Committee Meeting for consideration of the Budget for 1941. (1) Hold it on Thursday, the 12th December, (2) Circulate to the members the draft Budget estimates 2 or 3 days before the meeting.

No. 6.

27-11-40.

Recommendation Finance Committee No. 2 of 22-11-40. Report renewal of a Fixed Deposit (Receipt No. 05157, dated 30-10-39) for Rs.10,000 for a further period of one year, which matured on 30-10-40. Approve. Accepted by Council.

No. 12.

27-11-40.

Recommendation Finance Committee No. 4 of 22-11-40. Report that in accordance with the Council resolution dated the 27th August 1940, the pay bills for the office staff of the Society for the month of October 1940 were paid as a special case without being put up before the Finance Committee for their formal approval. Confirm. Accepted by Council.

No. 12.

27-11-40.

Recommendation Finance Committee No. 6 of 22-11-40. Report sale proceeds of waste papers, etc., amounting to Rs.516. Action approved. Accepted by Council.

No. 12.

27-11-40.

Recommendation Finance Committee No. 12 of 22-11-40. Bad debts to be written off owing to deaths, resignations, operation of Rule 38, Rule 40, etc. Write off. Accepted by Council.

No. 12.

27-11-40.

Recommendation Finance Committee No. 13 of 22-11-40. Amount not claimed in spite of repeated reminders, to be written off from personal account. . . Rs.460-4-0. Adjust. Accepted by Council.

No. 12.

27-11-40.

Recommendation Finance Committee No. 2 of 20-12-40. 9 bills were submitted for payment. (1) Pay bills (a) to (h), (2) As regards (i) make part payment of bill No. 769, dated 18-12-40, to the extent of Rs.3,494. The balance of the bill to be paid after the work is completed. Accepted by Council.

No. 9.

20-12-40.

Recommendation Finance Committee No. 4 of 20-12-40. Authority for payment of bills by the General Secretary and Treasurer till next Finance Committee Meeting. Grant. Accepted by Council.

No. 9.

20-12-40.

INSURANCE—

Recommendation Finance Committee No. 3(b) of 27-3-40. Renewal of Fire Policy No. 15467332 for Rs.2,50,000 covering Building and Contents of No. 1, Park Street, with the Commercial Union Assurance Co., Ltd., at an annual premium of Rs. 312-8-0, which falls due on 19-4-1940. Renew, but the question of insurance should be re-examined before the premium again falls due. Accepted by Council.

No. 16.

27-3-40.

Recommendation Finance Committee No. 5 of 20-6-40. Renewal of Fire Policy No. 20149423 with the Royal Insurance Co., Ltd., for Rs.25,000 covering MSS., etc., on the premises of the Society at an annual premium of Rs. 31-4-0. It will expire on 6th July 1940. The Policy is to be forwarded to Sir John Lort-Williams for examination and to be renewed if approved. Accepted by Council.

No. 9.

28-6-40.

Renewal of Fire Insurance Policies. Resolved that the policies be sent to the President for examination and advice.

No. 20.

28-6-40.

Recommendation Finance Committee No. 3(a) of 22-7-40. Renewal of Fire Insurance Policy No. 15467733 with the Commercial Union Assurance Co., Ltd., for Rs.1,25,000, covering Society's books and

pictures, at an annual premium of Rs.156-4-0, which will fall due on 10th August, 1940. All the assets to be insured with one company and full particulars to be obtained from the Commercial Union and other companies. Accepted by Council.

No. 12.

29-7-40.

Letter from the Commercial Union Assurance Co., Ltd., stating their inability to quote a rate more favourable than 1/8% and pointing out that compensation could be paid to the Society in case of accident only on a *pro rata* basis owing to the under-valuation of the Society's assets. (a) Accept Dr. Prashad's recommendations that (1) only special assets of the Society be insured and (2) that a policy covering all our property be taken out when funds become available. (b) State that the valuation of the Society's assets at sixteen lakhs is not approximate. (c) Discuss the whole matter with an insurance expert.

No. 2.

27-8-40.

Statement regarding the purchase of some more fire extinguishers (Recommendations No. 3 of the Special Finance Committee of 9-8-40). Purchase from Messrs. The Bengal Chemical and Pharmaceutical Works provided they are certified to by the Test House at Alipore.

No. 11.

27-8-40.

Recommendation Special Finance Committee of 9-8-40. The question of taking up of a comprehensive fire policy according to the suggestion of Finance Committee's meeting held on 22-7-40 and the renewal of an insurance with the Commercial Union covering the Society's books and pictures valued at Rs.1,25,000, which expires on the 10th August 1940. (1) The existing insurance policy No. 15467733 which was to expire on the 10th August 1940 (for Rs.1,25,000) be renewed; (2) A proper valuation of the Society's properties be made so that the Committee may be in a position to recommend further action; (3) Some more fire extinguishers be purchased; (4) Valuable books and MSS. be listed and housed separately as soon as practicable; (5) The Government of India be approached for an annual grant of Rs.2,000 to cover the Insurance of Government properties on permanent loan with the Society which in its depleted financial position the Society finds it impossible to undertake. Accepted by Council.

No. 13.

27-8-40.

Letter dated 23-9-40 from the Assistant Secretary to the Government of Bengal, regretting the inability of the Government to sanction a special grant to the Society to cover the cost of insuring MSS. Record. Write another letter to the Education Secretary asking for a grant of Rs.5,000 for preservation of MSS.

No. 18.

27-11-40.

INVITATIONS—

Letter dated 28-3-40 from the Vice-President, Working Committee, Fourth All-India Library Conference, inviting the Society to attend the 4th Session of the Conference. Record.

No. 12.

29-4-40.

LEASE—

Correspondence resting with letter No. J/2027 of 15-2-40 from Mr. J. N. Basu dealing with the execution of the renewal of lease and advertising agreement with the Standard Vacuum Oil Company. Resolved that the drafts be approved and that the General Secretary be, and hereby is,

authorized to sign both the lease and agreement on behalf of the Royal Asiatic Society of Bengal.

No. 6.

27-2-40.

Letter from Messrs. Standard Vacuum Oil Company dated 28-10-40 requesting permission to build an enclosure for two hydraulic lifts at the Park Street Service Station, together with the opinion of our Solicitors, Messrs. B. N. Basu & Co. (1) Find out from Solicitors whether we have the right to build on this place, and whether the proposal will affect our rights, (2) Ask Messrs. S.V.O. Company to furnish a picture of the structure and site as it will appear when finished.

No. 5.

27-11-40.

Letter dated 7-12-40 from Messrs. B. N. Basu & Co. re Society's right to rebuild on the site let out to Messrs. Standard Vacuum Oil Company. Write again according to President's suggestions.

No. 20.

20-12-40.

LECTURES—

Letter received from Sir Aurel Stein with regard to a General Lecture. Record.

No. 1.

27-3-40.

Report by the General Secretary on the arrangement made for a General Lecture in the Society's Rooms on Wednesday, the 31st July 1940, by Dr. Horace I. Poleman on 'America and Indic Studies'. Record.

No. 17.

29-7-40.

Arrangements for General Lectures. Arrange the following lectures : 1. Mr. Percy Brown—Art of Nepal, 2. Dr. J. B. Grant—Social Reconstruction in China, 3. Dr. S. L. Hora—Edible Fishes in Bengal, and lectures by 4. Sir Sarvapalli Radhakrishnan and 5. Sir N. N. Sircar.

No. 16.

20-12-40.

LIBRARY—

Recommendation Publication Committee No. 7 of 23-1-40. Letter from Dr. U. N. Ghosal regarding the Society's copper-plates and coin collection. Facilities for inspection to be granted. As arrangements have already been made in respect of this work the question of publishing the results does not arise at present, but if any important discovery is made by Dr. Ghosal and his son this may be reconsidered later on. Accepted by Council.

No. 11.

29-1-40.

Letter dated the 25th January, 1940, from Mr. C. A. Carstairs asking that the Rules be amended so that the Society's rooms may be kept open until 7 p.m. daily to enable members to make fuller use of the Society.

Resolved that as an experimental measure for one month the General Secretary shall arrange, without additional expenditure, for the Society's rooms to remain open daily until 7 p.m. (Sundays and gazetted holidays excepted); that half the library staff be allotted duties in alternate weeks to attend (a) from 10 a.m. to 5 p.m. and (b) from 12-30 to 7 p.m., and that a circular letter be issued to all Resident Members informing them of these arrangements. The General Secretary will report to the Council the result of this measure after the expiry of the experimental period.

No. 18.

29-1-40.

Letter dated the 27th January, 1940, from the Editor-in-charge, *Annals of Oriental Research* of the University of Madras stating that the Society has been placed on the free distribution list for the *Annals of Oriental Research* of the University of Madras. Accept with thanks.
No. 19. 29-1-40.

Recommendation Library Committee No. 3 of 23-2-40. Suggestion for the purchase of reference works for use of the Cataloguers of the Society's Arabic and Persian, Sanskrit and Bengali MSS. Request the Finance Committee to provide Rs.965 immediately and to arrange for a further sum of Rs.535 to be allotted for the purpose during the year to make a total of Rs.1,500. Accepted by Council.
No. 12. 27-2-40.

Recommendation Library Committee No. 4 of 23-2-40. List of books missing from the Society's library and the question of their replacement by purchase. The list be scrutinized by the Additional (Sectional) Secretaries, that they select the books needed, and that their recommendations together with a report as to availability and price be submitted to the Council for sanction to purchase. Accepted by Council.
No. 12. 27-2-40.

Recommendation Library Committee No. 5 of 23-2-40. List of parts of sets of periodicals missing from the Society's library and the question of their replacement by purchase. That the publishers be asked to state whether these parts are now available, whether they may be obtained free, or in exchange, or by purchase, and if so, at what price. Further report to be submitted for consideration. Accepted by Council.
No. 12. 27-2-40.

Recommendation Library Committee No. 9 of 23-2-40. Binding and repairing work needed in the library. That the Finance Committee be requested to provide funds and that this matter be given priority. Accepted by Council.
No. 12. 27-2-40.

Recommendation Library Committee No. 10 of 23-2-40. Report on the urgent requirements in the library and a review of the measures already adopted to meet some of these. That the Finance Committee be requested to provide funds and that the order of priority for these items should be: (a) Binding and repairing work. (b) Capital works—electrical installation and furniture. (c) Reference books for cataloguers. (d) Preparation of catalogues. (e) Replacement of missing periodicals. (f) Replacement of missing books. Accepted by Council.
No. 12. 27-2-40.

Recommendation Finance Committee No. 5(a) of 27-2-40. Recommendations of the Library Committee, minutes 23rd February 1940. Item 3—Purchase of reference works for the use of cataloguers of the Society's Arabic and Persian, Sanskrit and Bengali MSS. That a sum of Rs.965 only be provided for this purpose for 1940. Council order: Accept. A Special Meeting of the Finance Committee should be convened as early as possible to decide on items 5(b); 8, 9 and 10 of the minutes in question.
No. 11. 27-2-40.

Recommendation Finance Committee No. 5(b) of 27-2-40. Recommendations of the Library Committee, minutes 23rd February 1940. Items 9 and 10—Binding and repairing work and urgent requirements in the library. That the General Secretary and Treasurer draw up a

detailed statement showing the actual amounts required under each head, and the sources from and the extent to which funds can be made available. This report to be considered by the Finance Committee at a special meeting. Council order: Accept. A Special Meeting of the Finance Committee should be convened as early as possible to decide on items 5(b); 6, 9 and 10 of the minutes in question.

No. 11.

27-2-40.

Report by the General Secretary on the results of keeping the library opened until 7 p.m. on working days during the experimental period of February 1940. Record. The library to continue to remain open until 7 p.m. on working days for the month of March and a further report submitted at the end of that period.

No. 17.

27-2-40.

Further report by the General Secretary on the results of keeping the library open until 7 p.m. on working days during the month of March 1940. The arrangement to continue for another month, a more detailed record to be kept, and a further report submitted to the Council at its next meeting.

No. 13.

27-3-40.

Recommendation Library Committee No. 1 of 20-3-40. Letter from the Deputy Secretary to Government, Punjab, Revenue Department, notifying the discontinuance to the Society of free issues of Punjab District and State Gazetteers. That the Punjab Government be requested to make an exception in the case of the Society in view of the free issue of the Society's publications to that Government. Accepted by Council.

No. 17.

27-3-40.

Recommendation Library Committee No. 2 of 20-3-40. The question of replacement of books missing from the Society's library. Include Prof. Mahfuz-ul Haq's recommendation under item 3 *infra*. No further commitment can be entertained in respect of this list at present. Accepted by Council.

No. 17.

27-3-40.

Further report by the General Secretary on the results of keeping the library open until 7 p.m. on working days during the month of April. Record. The library to remain open until 6 p.m. on working days during May and June and until 7 p.m. during July and August. A further report to be submitted to the Council after that period has elapsed.

No. 6.

29-4-40.

Recommendation Library Committee No. 3(a) of 22-4-40. Purchase of the Notices of Archaeologia Orientalis, Series A, Vols. V and VI Tung-ching-ch'eng and Hung-shan-Hon, Ch'ik-Feng. Write and suggest exchange with our publications of equivalent value. Accepted by Council.

No. 9.

29-4-40.

Letter from Prof. Ghulam Yazdani regarding the presentation to the Society's library by H.E.H. the Nizam's Government of Ajanta by Ghulam Yazdani. A letter of thanks to be sent to H.E.H. the Nizam's Government. A letter also to be sent to Sir Akbar Hydari asking him for a donation to the Society.

No. 16.

29-4-40.

Recommendation Library Committee No. 7 of 21-5-40. Letter from Prof. Raghu Vira requesting the Society to subscribe to the critical edition of Ramayana by Valmiki. Subscribe. Accepted by Council.

No. 14.

27-5-40.

Recommendation Library Committee No. 2 of 22-7-40. Recommendation for the purchase of complete works of Bankim Chandra Chatterji (Royal Edition—Rs.50). Purchase. Accepted by Council.

No. 10.

29-7-40.

Recommendation Library Committee No. 3 of 22-7-40. Report by General Secretary of part receipt of books and manuscript from Sir Ziauddin Ahmad. Record. Accepted by Council.

No. 10.

29-7-40.

A report on the result of keeping the library open after office hours during the last seven months since February. Continue existing arrangements till the end of the current year.

No. 3.

27-8-40.

List of books, etc., outstanding from members of the Society for the period from 1932 to 1-1-1940. Accept the President's suggestions that (a) solicitor's letters be sent to Kumar Harit Krishna Deb, Mr. O. C. Gangoly, Mr. D. C. Chatterjee and Sir U. N. Brahmachari. (b) No further action be taken against Mrs. O. J. Koplanko and Babu Biswanath Basu. (c) Dr. N. C. Sen Gupta be requested to pay the price of a copy of Sukraniti. (d) Letters signed by the President be sent to Mr. M. A. P. Hirtzel, Dr. Stella Kramrisch, Mr. S. C. Seal and Pt. A. C. Vidya-bhusana.

No. 4.

27-8-40.

Recommendation Library Committee No. 1 of 21-8-40. Purchase recommendations for the month. Purchase Nos. 1, 3, 7, 8, 10, 19 and 23. (1) Appoint a small Committee to lay down principles which should underlie the purchase of new books. (2) The remaining books of the present list are to be scrutinized further before they can be recommended for purchase. Accepted by Council.

No. 16.

27-8-40.

Recommendation Library Committee No. 1 of 24-9-40. Letter from Dr. G. Bose of 19-9-40 concerning the recommendation made by him for the purchase of certain books on Psychology in August 1940. In view of the reasons given by Dr. Bose it was decided to purchase all the books recommended by him. Accepted by Council.

No. 3.

24-9-40.

Recommendation Library Committee No. 2 of 24-9-40. Purchase recommendations of books for the month of September 1940. Resolved that the books stated be purchased. Accepted.

No. 3.

24-9-40.

Recommendation Library Committee No. 3 of 24-9-40. Report on the find of certain old and rare books which are not mentioned in the Society's Library Catalogue. Record. Resolved that the present Librarian, Mr. P. O. Matthai, be congratulated on his extremely valuable finds during his stock-taking of the collections of the library. Accepted by Council.

No. 3.

24-9-40.

Presentation to the Society's library of 21 volumes of 'The Times' History of the War by our member, Mr. Chhote Lal Jain, and 57 works in English, Hindi and Gujarati by Sadha Vujaya Dharma Suri, editor of the *Yogasastra*. (1) Accept with thank. (2) Request Dr. S. K. Chatterji to scrutinize the 57 works in English, Hindi and Gujarati and retain only the suitable ones in the library.

No. 6.

24-9-40.

Recommendation Library Committee No. 1 of 22-11-1940. Purchase recommendations for the month. Resolved that in future members be asked to state reasons when recommending books for purchase. Accepted by Council.

No. 13.

27-11-40.

Recommendation Library Committee No. 2 of 22-11-40. The question of the disposal of incomplete books, such as Encyclopaedia, Reports, etc. Resolved that the Library Secretary and the General Secretary be asked to examine and scrutinize all papers, pamphlets, stray copies of Journals and incomplete works that are being found during the process of stock-taking and reorganization of the library, and make their recommendations to the Council regarding their disposal. On the motion of Major C. L. Pasricha it was resolved that the Library Committee takes full responsibility for the disposal of papers, pamphlets, etc., made by the Honorary Treasurer, acting as the General Secretary during the month of October 1940. Accepted by Council.

No. 13.

27-11-40.

Letter from Mr. O. C. Gangoli requesting the loan of 3 volumes of Marshall's Monograph on Sanchi. 1. Decline, as these are valuable works of art containing costly plates. 2. Give him every facility to consult these, if he so desires, in the Society's rooms.

No. 24.

20-12-40.

LOAN OF MSS.—

Recommendation Library Committee No. 5(e) of 23-1-40. Application for loan of MS. from Bhandarkar Oriental Research Institute, Poona, for 'Devabadhas' commentary on the Mahabharata, Adiparva. Lend against an indemnity bond for Rs.150 for 3 months. Accepted by Council.

No. 10.

29-1-40.

Recommendation Library Committee No. 5(d) of 23-1-40. Application for loan from the Vice-Chancellor, Dacca University, of 2 MSS. 'Satapanca-Saddesvatibhaga' and 'Desavalivivrti'. Lend against indemnity bonds for Rs.10 and Rs.150 respectively for 3 months. Accepted by Council.

No. 10.

29-1-40.

Recommendation Library Committee No. 5(c) of 23-1-40. Application for loan from Prof. M. M. Haq of 2 MSS. of 'Riyaz-ush-Shuara' and one of 'Rawdat-ul-Jannat'. Lend as the work for which these are required is being carried out on behalf of the Society. Accepted by Council.

No. 10.

29-1-40.

Recommendation Library Committee No. 5(b) of 23-1-40. Application for loan of MS. from the Principal, A. M. College, Mymensingh, for 'Anisat Jalibin wa wadatus Salikin'. Decline, but a rotograph copy of the MS. may be supplied later on. Accepted by Council.

No. 10.

29-1-40.

Recommendation Library Committee No. 5(a) of 23-1-40. Application for loan of MS. from Librarian, Lytton Library, Aligarh, for 'Chachnama'. Lend against an indemnity bond for Rs.500. Accepted by Council.

No. 10.

29-1-40.

Recommendation Library Committee No. 4(b) of 23-1-40. Application for extension of the period of loan of the MS. of 'Malatimadhava' from Bhandarkar Oriental Research Institute, Poona, for a further period of six months. (This MS. was issued to them on 30-3-39 and an extension was granted till 31-10-39.) Grant an extension of the period of the loan for six months. Accepted by Council.

No. 10.

29-1-40.

Recommendation Library Committee No. 4(a) of 23-1-40. Application for extension of the period of loan of the MS. 'Surjanacarita' from Dr. H. C. Ray. (This MS. was issued on loan to Dr. H. C. Ray on 9-8-1932. He now desires to keep it till his work on it is finished.) Dr. H. C. Ray should be requested to return the MS. and, if he again requires it, a fresh application for the loan should be submitted. Accepted by Council.

No. 10.

29-1-40.

Recommendation Library Committee No. 3 of 23-1-40. Application for exchange of publications from the Manager, Shibli Academy, Azamgarh. Decline. Accepted by Council.

No. 10.

29-1-40.

Recommendation Library Committee No. 5(f) of 23-1-40. Application for loan of MS. from Rao Bahadur K. V. Rangaswami Aiyangar for MS. 'Kriyakalpataru' (3 MSS.). Lend against indemnity bonds for Rs.50, Rs.50 and Rs.100 respectively for 3 months. Accepted by Council.

No. 10.

29-1-40.

Recommendation Library Committee No. 5(g) of 23-1-40. Application for loan of MS. from the Registrar, University of Madras, for 'Tarikh-i-Ferishta' (No. 136 of Ivanow's catalogue of Persian MSS). Lend against an indemnity bond for Rs.1,000 for 3 months. Accepted by Council.

No. 10.

29-1-40.

Recommendations of the Publication Committee. Accept. Also resolved that the General Secretary be empowered to lend one MS. at a time to Prof. Mahfuz-ul Haq for his work in connection with the publication of the Haft-Iqlim on behalf of the Society.

No. 11.

29-1-40.

Application for loan of MSS.: (a) The Principal, Vidya-Bhavana, Visva-Bharati, for the loan of 'Sapinat-ul-Awliya'. Lend against an indemnity bond for Rs.500 for a period of three months. (b) The Registrar, University of Dacca, for the loan of 3 MSS. of 'Agnipurana'. Postpone until next meeting. General Secretary to submit a detailed list of MSS. at present on loan. (c) Bhandarkar Oriental Research Institute, Poona, for a 'commentary on the Malati Madhava' by Harihara. Decline. A photostat copy may be supplied to them. (d) The Librarian, University of Dacca, for the loan of 'Munis'ul-Arwah', No. 74, Curzon Collection. Decline.

No. 7.

27-2-40.

Application for the extension of the period of loan of 'Malati Madhava' till 31-8-40 (This was issued to them on 4-4-39.) Extend.

No. 8.

27-2-40.

Letter from Yale University enquiring whether they should keep the MSS. of 'Sabbaparvan' (Mahabharat) for some time more on account of the difficulty of transport owing to the war. The MS. to be retained by them until safer conditions of transmission obtain.

No. 9.

27-2-40.

Report on MSS. lent out during the month. Record. Also resolved that in future a tabular statement showing all MSS. on loan and to whom lent, with dates and full particulars shall be submitted to the Council monthly.

No. 10.

27-2-40.

Report by the General Secretary of the outstanding loan to Prof. G. Tucci of a MS. in 1930. The matter to be followed up through the Consulate-General for Italy, and the Department of Education, Rome. Major Pasricha has agreed to furnish Prof. Tucci's present address.

No. 19.

27-2-40.

Application for loan of 3 MSS. of 'Agnipurana' by the Registrar, University of Dacca (postponed since the last meeting of the Council), together with a detailed list of MSS. at present on loan. Lend for a period of three months against indemnity bonds of Rs.200, Rs.100 and Rs.250 respectively, after repair. Further resolved that all Universities and Institutions to which the Society issues its publications free should be requested to present all their publications to the Society in exchange. Further resolved that the General Secretary be asked to prepare (i) a complete list of institutions with which exchanges of publications are made and (ii) a complete list of institutions and individuals to whom, under the orders of the Government, free issues of the Society's Bibliotheca Indica Series are sent. These lists to be submitted to the Council at its next meeting.

No. 11.

27-3-40.

Report on MSS. lent out during the month. Record. Resolved that Dr. S. K. Chatterji and Dr. M. Z. Siddiqi approach Dr. Hem Chandra Ray to return the MS. on loan with him. Failing any result the General Secretary to report the matter to the Vice-Chancellor, Calcutta University. It was also resolved that the General Secretary follow up, through Mr. J. N. Basu, the efforts made to persuade Dr. Ziauddin Ahmed to return the MS. and books lent to him.

No. 12.

27-3-40.

Renewal of request of Mr. S. K. Rahman for the loan of MSS. Obtain complete details and bring up again at the next meeting of the Council.

No. 20.

27-3-40.

Application from the Registrar, University of Madras, for extension of loan of 2 MSS. for a further period of three months from 3-4-40. Grant.

No. 21.

27-3-40.

Correspondence with Mr. S. K. Rahman regarding the loan to him of 4 MSS. of 'Kalimat-ush Shuara'. Lend two MSS. at a time under the usual conditions.

No. 2.

29-4-40.

Report on MSS. lent out during the month. Record. The General Secretary to issue a final demand to Dr. Hem Chandra Ray for the return of the MS. on loan with him, and to inform him that unless he complies, the matter will be referred to the Society's legal advisers.

No. 5.

29-4-40.

Letter from Mr. T. R. Chintamani requesting that the period of loan of 2 MSS. may be extended by three months to enable him to complete the work. Extend.

No. 17.

29-4-40.

Request from the Registrar, University of Madras, for extension of the period of loan of MS. 'Tarikh-i-Ferishta' for three months from the 10th May 1940. Extend for a further three months from the 10th May 1940.

No. 5.

27-5-40.

Application for loan of MSS. of Srstidhara's Commentary on the Mahabharata by Bhandarkar Oriental Research Institute, Poona. Lend against an indemnity bond for Rs.300 for a period of three months.

No. 6.

27-5-40.

Request from the Curator, Bhandarkar Oriental Research Institute, Poona, for extension of the period of loan of MS. 'Mahabharata-tatparyatika Jnandipika' by Devabodha from 11-5-40 to 31-7-40. Extend.

No. 7.

27-5-40.

Correspondence with Dr. Hem Chandra Ray concluding with his letter, dated 28-5-40 in respect of the return of the MS. 'Surjanacarita' lent to him in 1932. Resolved that (1) the President be requested to write on behalf of the Society to Dr. H. C. Ray stating that he may enter into a new bond on terms suggested by the President on condition that he returns all books belonging to the Society that are still with him and are long overdue, (2) all bonds executed by various scholars and institutions for borrowing the Society's MSS. should be brought up to date.

No. 2.

28-6-40.

Application dated 4-6-40 from the Madras University Library for extension of period of loan of the MS. 'Tarikh-i-Ferishta' by another 3 months. Extend.

No. 5.

28-6-40.

Application from Rao Bahadur K. V. Rangaswami Aiyangar, dated 28-5-40, re extension of the period of loan of the MSS. 'Kṛtya-kalpataru' and a work on Sraddha by another 3 months. Extend.

No. 6.

28-6-40.

Application from Dr. R. C. Majumdar, dated 14-6-40, for extension of the period of loan of 2 MSS. by another two months. Extend.

No. 7.

28-6-40.

Letter No. J-7325 of 14-6-40 from our Solicitors, Messrs. B. N. Basu & Co., enclosing copy of letter No. J-7323 of the same date sent by them to Sir Ziauddin Ahmed. Record.

No. 14.

28-6-40.

A letter from the India Office regarding the loan of MS. No. 4566D. Record.

No. 17.

28-6-40.

Application for extension of loan of MS. 'Amarakoshavyakha' (Govt. MS. No. 846) for another three months by Mr. T. R. Chintamani. Extend.

No. 4.

29-7-40.

Application from Dr. B. R. Chatterjee for the loan of one MS. 'Naradiya Purana'. Grant permission under usual conditions.

No. 8.

29-7-40.

Request from the Registrar of the University of Madras for an extension of the period of loan of MS. 'Tarikh-i-Ferishta' by another six months from 10-8-40. Extend. Resolved that future extensions of loans of MSS. might be granted by the General Secretary in consultation with the Philological Secretary unless the MS. became damaged or for anything for which consultation with the Council would seem desirable in the opinion of the General Secretary.

No. 6.

27-8-40.

Request from the Bhandarkar Oriental Research Institute for a further extension of the period of loan of MS. 'Mahabharata-tatparyatika Jnandipika' up to 1st January 1941. Extend.

No. 7.

27-8-40.

Renewal of loan of MSS. to Dr. H. C. Ray. Record.

No. 22.

27-8-40.

A letter from Messrs. B. N. Basu & Co., Solicitors, dated 9th September 1940, regarding the period for which our bonds covering MSS. are enforceable. Record.

No. 7.

24-9-40.

Application from the Bhandarkar Oriental Research Institute, Poona, asking for an extension of the period of loan up to 31st March 1941 of MS. 'Malati Madhava'. Extend.

No. 10.

24-9-40.

Request from the Librarian, Punjab University Library, of 9th November, 1940, for the loan of the following two MSS.: (a) Persian versified translation of the Bhagavat Gita by Faizi, (b) Persian translation of the Gita by Dara Shikuh (Abi Zindagi). The MSS. are not to be issued, but give the Librarian of the Punjab University all facilities for copying the MSS. if required.

No. 11.

27-11-40.

MANUSCRIPTS—

Letter dated the 2nd January, 1940, from Mr. Jogendranath Gupta asking that he may be permitted to prepare a descriptive catalogue of the Society's Bengali MSS. Resolved that the preparation of the catalogue be entrusted to Mr. Jogendranath Gupta at the usual remuneration under the supervision of the Philological Secretary, and that not more than Rs.500 be expended during 1940 for this work.

No. 6.

29-1-40.

Letter dated the 26th January, 1940, from the Assistant Secretary, Government of Bengal, requesting the Society to take charge of sundry MSS. belonging to the India Office, London. Resolved that the General Secretary ascertain fuller details more particularly in regard to the

Society's responsibilities and the extent to which these can be covered by insurance.

No. 17.

29-1-40.

Recommendation Library Committee No. 6 of 23-2-40. Letter from Maharaj Kumar Raghubir Singh of Sitamau, suggesting the feasibility of introducing micro-film copying of MSS. by the Society. That Sir Jadunath Sarkar be asked to furnish a list of those micro-film copies of MSS. in the Maharaj Kumar's library which should find a place in the Society's library. Accepted by Council.

No. 12.

27-2-40.

Report by the General Secretary on the receipt of MSS. belonging to the India Office from the Secretary, Education Department, Government of Bengal, for safe custody for the period of war.

No. 22.

27-2-40.

Recommendation Library Committee No. 1 of 22-4-40. Application from Mr. G. Bux, supported by Sir Jadunath Sarkar, to be allowed to take extracts from 4 Arabic MSS. belonging to the Society. Grant, under supervision. Accepted by Council.

No. 9.

29-4-40.

Recommendation Library Committee No. 3(b) of 22-4-40. Letter from Mr. J. C. Gupta concerning the availability of sundry Sanskrit and Bengali MSS. for purchase by the Society. Prof. Chintaharan Chakravarti to be requested to inspect and report on the Sanskrit MSS. only with a view to purchasing those of which the Society possesses no copy and those which are in better condition than those of the Society. Accepted by Council.

No. 9.

29-4-40.

Report on the misplacement or theft of two Sanskrit MSS. Record. After installation of steel furniture is completed a complete and careful stock should be taken and a further report submitted to the Council.

No. 6.

27-3-40.

Recommendation Library Committee No. 4 of 21-5-40. Estimate for repairing, pasting and binding MSS. and books. Proceed with the work as far as funds permit, MSS. in the Tibetan and Sanskrit sections being given priority. Accepted by Council.

No. 13.

27-5-40.

Application from Mr. Prabhas Chandra Majumdar, M.A., Post-Graduate Jubilee Scholar of the Calcutta University, for permission to consult manuscripts of the Society. Grant, under proper supervision.

No. 14.

27-3-40.

Report by the General Secretary on reports appearing in the local press on the state of the MSS. of the Society. General Secretary to prepare a note explaining the exact position in brief for submission to the press. The note to be approved by the Council in circulation.

No. 2.

27-3-40.

Letter from the Librarian, India Office, requesting the Society to take charge of 5 India Office MSS. on loan to the Society for the period of the war. Record.

No. 24.

27-3-40.

Draft note on the state of the MSS. of the Society, prepared by the General Secretary for submission to the press. Record.

No. 1.

29-4-40.

Press notices, in respect of the Society's MSS. which have appeared in the 'Amrita Bazar Patrika' and the 'Hindusthan Standard'. Record.

No. 13.

29-4-40.

Letter from Dr. H. I. Poleman, Director of Indic Studies, Library of Congress, Washington,

(a) asking for permission to photograph by the micro-film process certain MSS. in the Society's collections and

(b) putting forward a plan for the development and operation of a micro-filming service. (a) Permit. (b) Accept with thanks. The General Secretary and Treasurer to settle details.

No. 18.

29-4-40.

Request from Dr. Raghubir Singh for permission to copy Vol. 2 of MS. 'Munsha'at-Mahru'. Grant.

No. 4.

27-5-40.

An extract from the 'Indian Pen' of June 1940 regarding MSS. from Tipu Sultan's Library. Record.

No. 15.

28-6-40.

Letter dated the 26th June, 1940, from Mr. Jagadish Narayan Sarkar, Lecturer, Patna College, requesting permission to consult some Persian MSS. bearing on the life of Mir Jumla and to take extracts or translations from relevant passages. Grant permission under usual conditions.

No. 6.

29-7-40.

Recommendation Finance Committee No. 4 of 21-8-40. The cost of repairing, pasting and binding MSS. recommended by the Library Committee of 21-5-40, is being met out of Sanskrit MSS. Fund. Approve the action taken. Accepted by Council.

No. 15.

27-8-40.

Recommendation Publication Committee No. 4 of 20-3-40. Application of Mr. Syed Jamil Ahmad Naqvi for preparation of a catalogue of Urdu MSS. in the library. Decline. Accepted by Council.

No. 18.

27-8-40.

Recommendation Publication Committee No. 7 of 20-12-40. Material for a catalogue of Bengali MSS. in the possession of the R.A.S.B. prepared by Mr. Jogendranath Gupta. Recirculate to Publication Committee for opinion. Accepted by Council.

No. 11.

20-12-40.

MEDALS—

Letter of thanks from Dr. Leo Berg for the award to him of the Joy Gobind Law Memorial Medal. Record.

No. 2.

27-2-40.

Report by the General Secretary on the issue of the Barclay Memorial Medal to Major-General Sir Robert McCarrison. Bt.-Col. R. N. Chopra

to be requested to ask Dr. L. A. Napier, who is shortly proceeding to England, to take the medal with him.

No. 22.

27-3-40.

Letter No. 8384 of 10-5-40 from the University of Calcutta asking the Society to nominate a representative to serve on the Special Committee for the award of the Sarojini Basu Gold Medal. That Dr. S. K. Chatterji be the Society's representative.. If Dr. Chatterji has already been nominated by other bodies then Dr. Kalidas Nag to be the Society's nominee.

No. 2.

27-5-40.

Letter from Prof. Franz Weidenreich thanking the Society for the award to him of the Anandale Memorial Medal. Record.

No. 19.

28-6-40.

A letter from Major-General Sir Robert McCarrison, Kt., C.I.E., M.D., acknowledging receipt of the Barclay Memorial Medal. Record.

No. 15.

29-7-40.

Appointment of Advisory Board for the award of Sir William Jones Memorial Medal for 1940. The Board to consist of:

Dr. S. S. Bhatnagar,	
Dr. K. P. Biswas,	
Mr. H. C. Chakladar,	
Dr. J. N. Mukherjee,	
Major C. L. Pasricha,	
Dr. M. N. Saha,	
Sir John Lort-Williams,	
Dr. Baini Prashad,	} <i>Ex-Officio.</i>
Dr. B. S. Guha.	

No. 4.

27-11-40.

Question of nominating Dr. S. S. Bhatnagar, a non-member of the Society, as a member of the Sir William Jones Memorial Medal Board. The selection of Sir U. N. Brahmachari be approved in place of Dr. S. S. Bhatnagar.

No. 1.

20-12-40.

Report of the Committee appointed to consider the question of a design for the die of the Indian Science Congress (Calcutta) Medal. 1. Postpone consideration till January 2. Request Mr. O. C. Gangoli to explain in detail the significance of the designs sketched by him.

No. 17.

20-12-40.

Letter No. 7127P of 29-11-40 from Government of Bengal intimating that the Government of India are unable to forward the Annandale Medal to Prof. F. Weidenreich of Peiping as he is a German. Record.

No. 25.

20-12-40.

MEETINGS--

The question of holding ordinary monthly meetings during the recess months, September and October 1940. Do not hold any ordinary monthly meeting at that time.

No. 16.

29-7-40.

MEMBERSHIP—

Correspondence regarding the application of Mr. Bangalore Venkataraman alias B. N. Venkataramaiya to be elected as an Ordinary Member of the Society. Regret that his application cannot be entertained.

No. 1.

29-1-40.

Letter No. 598 of 9-2-40 from Mr. B. V. Raman asking to be informed why the Council cannot entertain his application for membership. Decline, with regret.

No. 5.

27-2-40.

Application for admission to Institutional Membership of the Society from the Keeper of the Nepal Museum, Kathmandu. Accept.

No. 3.

27-5-40.

Extract from a letter dated the 12th May 1940, from Dr. J. H. Hutton, Cambridge, requesting the Society to put his name on the list of absentee members. Treat him as an absentee member. The Secretary to write to him whether it will be possible for him to compound his subscription for life membership after the war.

No. 1.

29-7-40.

Letter dated 18th July 1940, from Dr. A. L. Coulson tendering resignation from the Society with effect from the end of the current quarter. Accept with regret.

No. 7.

29-7-40.

Recommendation Finance Committee No. 6(a) of 22-7-40. List of members who are in arrears with their subscription for four or more quarters to whom Circular Letter No. 1 will have to be sent. Apply the rules. Accepted by Council.

No. 12.

29-7-40.

Recommendation Finance Committee No. 6(b) of 22-7-40. List of members who are in arrears with their subscriptions for eight or more quarters to whom Circular Letter No. 2 will have to be sent. Apply the rules. Accepted by Council.

No. 12.

29-7-40.

Letter dated the 25th June 1940, from Dr. A. A. Bake, resigning membership of the Society. Record.

No. 14.

29-7-40.

The question of re-electing Prof. Kshitish Chandra Chatterji Shastri, Lecturer, Calcutta University, who was removed under Rule 38 with an outstanding of subscription of Rs.90 in 1930. Request him to join as a new member.

No. 10.

27-8-40.

Reconsideration of application for membership from Prof. Kshitish Chandra Chatterji Shastri in the terms of Rule 5. Resolved to readmit him as an Ordinary member on his explaining the circumstances which made him sever his connection with the Society.

No. 14.

24-9-40.

Removal of Members' names under Rule 40. Announce in next ordinary monthly meeting.

No. 3.

27-11-40.

Recommendation Finance Committee No. 7 of 22-11-40. List of members who are in arrears with their subscriptions for four or more quarters to whom Circular Letter No. 1 will have to be sent. Apply rules. Accepted by Council.

No. 12.

27-11-40.

Recommendation Finance Committee No. 8 of 22-11-40. List of members who are in arrears with their subscriptions for four or more quarters to whom Circular Letter No. 2 will have to be sent. Apply rules. Accepted by Council.

No. 12.

27-11-40.

Recommendation Finance Committee No. 9 of 22-11-40. List of members who are in arrears with their subscriptions for eight or more quarters to whom Circular Letter No. 3 will have to be sent. Apply rules. Accepted by Council.

No. 12.

27-11-40.

Recommendation Finance Committee No. 10 of 22-11-40. List of members for removal under Rule 38 to whom Circular Letter No. 3 was sent more than six months ago. Apply rules in case of all with the exception of Dr. S. K. Mukherjee whom Dr. J. N. Mukherjee undertook to approach personally. Accepted by Council.

No. 12.

27-11-40.

Recommendation Finance Committee No. 11 of 22-11-40. List of members for removal under Rule 40. Apply rules. Accepted by Council.

No. 12.

27-11-40.

Letter dated 13-12-40 from Mr. W. D. West, informing the continuation of Membership to the Society of Dr. J. B. Auden. Record. Convey the thanks of the Council to Mr. W. D. West for his help.

No. 18.

20-12-40.

MISCELLANEOUS—

Letter of thanks from the General Secretary, Indian Science Congress Association, for the help rendered to that Association by the Society for a portion of the year 1939-40. Record.

No. 8.

29-1-40.

Letter dated 15-1-40, from Col. R. B. Seymour Sewell requesting the Society to forward to him for transmission to the Secretary of State, its views regarding the value of the series of Fauna of British India, publication of which has been stopped. Resolved that the President be requested to invite the Patron, His Excellency Sir John Herbert, to be so good as to place the matter before Lord Zetland, Secretary of State for India, pointing out all the facts and stressing the necessity for the continuation of the work.

No. 4.

27-2-40.

Report of Dr. U. N. Ghosal on some old records in the collection of the Calcutta High Court. Record. A vote of thanks to be conveyed to Dr. Ghosal.

No. 18.

27-2-40.

Power of Library and Publication Committees to co-opt members. The rules must be adhered to and co-option is not permissible. The

resolutions, item 15(b) and (c) of Council, dated the 27th February, 1940, to be modified accordingly.

No. 2.

27-3-40.

Letter of thanks from Mr. Hurmuz Kaus for information supplied to him. Record.

No. 5.

27-3-40.

Letter No. Circ. 40-41 of 16-3-40, from the General Secretary, Indian Science Congress Association, inviting scientific and technical officers of the Society to become members of the next Session of the Congress to be held at Benares in 1941. Record.

No. 10.

27-3-40.

Letter from Lady Ginwala thanking the Society for the help afforded her during her stay in Calcutta. Record.

No. 25.

27-3-40.

Recognition of the 79th birthday of the Poet Rabindra Nath Tagore. That Sir S. Radhakrishnan be requested to draft a suitable message and that a special social meeting be arranged by the Society at the poet's convenience.

No. 1.

27-5-40.

Installation of a telephone extension. Enquire the cost of plug connections and report to Council.

No. 8.

27-5-40.

Letter dated 11-2-40 and enclosures from the Chairman, Kokusai Bunka Shinkokai, furnishing details of a world-wide prize essay contest to commemorate the 2600th anniversary of the founding of the Empire of Japan. Record.

No. 17.

27-5-40.

Letters from Messrs. J. B. Auden and J. A. Dunn, dated the 22nd and 24th June 1940. Resolved that (1) the President be requested to discuss the matter with Dr. Fox and (2) that Major Pasricha and the General Secretary should discuss the best method of preserving all valuable possessions of the Society.

No. 3.

28-6-40.

A letter from Dr. H. C. Ray to the President suggesting changes in the work of the Society. After discussion the President withdrew the letter addressed to him by Dr. Ray as he considered it a private communication. It was resolved that in view of the withdrawal of the letter of Dr. Ray, by the President, it could not be formally considered. The Council, however, requested the President to inform Dr. Ray that it deprecated the language and tone of his references to the Honorary General Secretary. Resolved further that the suggestions contained in Dr. Ray's letter to the President when formally submitted will be considered by the Library Committee with Mr. Percy Brown as a co-opted Member.

No. 5.

29-7-39.

Suggestions for contribution towards War Defence Savings Bonds and Certificates by the Staff of the Society. Accept.

No. 5.

27-8-40.

Copy of the letter drafted by Sir S. Radhakrishnan and signed by the President, containing the Society's felicitations on the occasion of

the 80th birthday of the poet. Convey the Society's thanks to Sir Sarvapalli Radhakrishnan.

No. 20.

27-8-40.

Dr. Rabindra Nath Tagore's reply to the letter of felicitations on the occasion of his 80th birthday. Record.

No. 22.

27-8-40.

Circular Letter No. 2, dated 11-10-40, from the Indian History Congress, Fourth Session (Lahore), 1940. Put it up on notice board.

No. 1.

27-11-40.

Letter dated 31-10-40 from the Government of India, Department of Education, Health and Lands, New Delhi, in reply to Society's letter No. 1803 of 30-8-40. Record.

No. 19.

27-11-40.

Letter dated 15-11-40 together with enclosure from W. Ivanow, Esq., to the President of the Society regarding Catalogue of Arabic MSS. published by the Society. (1) A Committee consisting of the following to report on the matter:

1. Dr. S. K. Chatterji,
2. Prof. M. Mahfuz-ul Haq,
3. Dr. S. P. Mookerjee,
4. Prof. M. Z. Siddiqi and
the *ex-officio* Members.

(2) It was resolved further that all MSS. and galleys of the papers and works published by the Society are to be preserved in the archives of the Society for a certain period after the publication of the works.

No. 21.

27-11-40.

Letters dated 4-12-40 and 12-12-40 from the Senior Censor, Calcutta, requesting the use of our Micro-film Camera for secret and confidential work in connection with the war. Record. If any help is required in future the General Secretary is to render all possible assistance.

No. 6.

20-12-40.

Report of the Committee appointed to consider Mr. Ivanow's letter to the President. Postpone consideration till January.

No. 13.

20-12-40.

ORDINARY FELLOWS—

Recommendations of the Resident Fellows of the Society, dated the 5th January 1940. Accept. Put up for election as Fellows in the Annual Meeting, 1940, Dr. U. N. Ghosal, Dr. B. C. Law, Dr. R. C. Majumdar and Mr. H. S. Pruthi.

No. 4.

29-1-40.

Letters of thanks from Drs. U. N. Ghosal, B. C. Law, R. C. Majumdar and H. S. Pruthi for their election as Ordinary Fellows of the Society. Record.

No. 3.

27-2-40.

PROVIDENT FUND—

Recommendation Finance Committee No. 6 of 23-1-40. Application of daftry Shaik Nawab Jan for a loan of Rs.50 to meet his personal marriage expenses. Grant a loan of Rs.15 from the Provident Fund

bearing interest at 3% per annum repayable in monthly instalments of Rs.2 each. Council order: Accept. Further resolved that daftry Nawab Jan be granted a loan of Rs.35 from General Funds under the personal guarantee of the Librarian. The loan to be repayable at Rs.3 p.m. and to bear interest at 3% per annum.

No. 9.

29-1-40.

Recommendation Finance Committee No. 8 of 27-2-40. Application from Pt. B. B. Mukherjee, 2nd Pandit, for a loan of Rs.160 from the Provident Fund. Grant. The loan to bear interest at 3% per annum and to be repaid by instalments of Rs.10 monthly. Council order: Accept.

No. 11.

27-2-40.

Recommendation Finance Committee No. 11 of 20-6-40. Application from Mr. D. K. Das, Press Clerk, dated 19-6-40 for a loan of Rs.480 from Provident Fund. Grant loan on 3% interest and ask him to avail himself of free medical treatment in the Tropical School. Accepted by Council.

No. 9.

28-6-40.

Recommendation Finance Committee No. 3 of 24-9-40. Application dated 18-9-40 from Mr. S. K. Ray, General Assistant, for a loan of Rs.400 from Provident Fund. Lend and credit interest at 1% to his Provident Fund Account. Accepted by Council.

No. 2.

24-9-40.

Recommendation Finance Committee No. 4 of 24-9-40. Application dated 20th September 1940, from Shah M. Ahmad, First Maulvi, for a loan of Rs.2,000 from Provident Fund. (1) Lend him the maximum amount for which he is eligible under the Rules from his Provident Fund and credit the interest at 1% which is to be charged on the loan to his own account. (2) Lend him the remainder of the sum of Rs.2,000 applied for from the General Fund and charge him 2% interest on it. Accepted by Council.

No. 2.

24-9-40.

Application from Mr. A. Michael, Steno-typist of the Society, for joining the Provident Fund of the Society. Admit.

No. 21.

20-12-40.

PUBLICATIONS—

Recommendation Publication Committee No. 4 of 23-1-40. Fixation of the number of reprints of articles published in the Journal and Memoirs. Ten copies only of reprints in addition to the numbers required by the author should be printed. Accepted by Council.

No. 11.

29-1-40.

Recommendation Finance Committee No. 6 of 27-2-40. Recommendation of the Publication Committee of 23rd February 1940, item 4. Review of the commitments of the Society in respect of publications. As for item 5(b). Council order: Accept. A Special Meeting of the Finance Committee should be convened as early as possible to decide on items 5(b), 6, 9 and 10 of the minutes in question.

No. 11.

27-2-40.

Recommendation Publication Committee No. 5 of 23-2-40. Request from Prof. M. Mahfuz-ul Haq for extension of the period of service of

the Maulvi appointed as his assistant for collating the 'Haft Iqlim' by 1 month and 15 days. Extend. Accepted by Council.
No. 13. 27-2-40.

Recommendation Publication Committee No. 4 of 23-2-40. Review of the financial commitments of the Society in respect of Publication. That the Finance Committee be requested to arrange for funds to be provided for the publication of the Journal, for those works in the Bibliotheca Indica Series that have already been undertaken, and for new works in the Bibliotheca Indica Series which have been recommended for publication. Further recommended that this should be a first charge on the Society's finances and that the Journal should not be curtailed for financial reasons. Accepted by Council.

No. 13.

27-2-40.

Editorial Review of the Journal of the Society. Vol. IV (1938), Letters, Part 3, appearing in Nature, Vol. 145, No. 3662 of 6-1-40. Record.

No. 21.

27-2-40.

Reconsideration of the re-issue of Advance Proceedings. Accept the General Secretary's and Treasurer's recommendations.

No. 4.

27-3-40.

Recommendation Publication Committee No. 5 of 20-3-40. Circulation of papers to members of the Committee. In future only the paper itself, the opinion of the referee, and the Press estimate of costs to be circulated. Bulky illustrations, charts, diagrams, etc., should not be circulated. Accepted by Council.

No. 18.

27-3-40.

Regularization by *ex post facto* sanction to the work of preparation of Descriptive Catalogue of Sanskrit MSS. from Vol. 8 onwards by Prof. Chintaharan Chakravarti. Accord *ex post facto* sanction.

No. 3.

29-4-40.

Recommendation Publication Committee No. 4 of 22-4-40. Report on the procedure followed in the submission of a paper for publication on the 'Cult of Magdeswari' by S. Das-Gupta. (a) Confirm the action of the General Secretary. (b) Inform Mr. K. P. Chattopadhyaya about the procedure for the receiving and publication of papers recommended by the Special Enquiry Committee and adopted by the Council, and state that these were designed to produce order, discipline and regularity. Point out the highly objectionable nature of the language used in his letter dated the 16th April 1940, and call for an apology which must be made before any further action in regard to the paper can be taken. (c) Correspondence between Secretaries or Members of Council and Committees must be treated as confidential and not passed on to other members of the Society. Accepted by Council.

No. 10.

29-4-40.

Recommendation Publication Committee No. 6 of 21-5-40. Letter from the Superintendent, Baptist Mission Press, giving details of the amounts charged on account of authors' corrections in works recently published. Author's corrections in excess of 25% of the cost of type-setting, etc., to be paid by the author. Accepted by Council.

No. 14.

27-5-40.

Letter from Dr. Baini Prashad forwarding a copy of a review of his paper on the 'Life and Work of Khwajah Nizamuddin Ahmed Bakhshi'. Record.

No. 16.

27-5-40.

Recommendation of the Publication Committee No. 5 of 10-6-40. Resolved on the recommendation of Major C. L. Pasricha that instructions regarding the submission of Papers in proper form be printed on the inside cover of the Journal and Memoirs of the Society for the guidance of the contributors. Accepted by Council.

No. 11.

28-6-40.

Recommendation Publication Committee No. 5 of 22-7-40. Request from Dr. J. B. Chaudhuri for permission to publish Society's MS. 'Vag-Mandana-Junaduta-Kavya' in the Indian Historical Quarterly and the B. & O. Research Society. Permit him to publish subject to suitable references to the Society being made in this connection. Accepted by Council.

No. 11.

29-7-40.

Recommendation Publication Committee No. 3 of 21-8-40. Draft instructions to authors regarding submission of papers for publication in the Journal and Memoirs. Accept after revision and condensation by Dr. Baini Prashad. Accepted by Council.

No. 17.

27-8-40.

Extract from a letter from Dr. Gudger received by Dr. Baini Prashad regarding the former's paper on 'The alleged pugnacity of the sword-fish and the spearfishes as shown by their attacks on vessels' published in the Memoirs of the Society, together with a letter of 1-7-40 from Dr. Gudger addressed to the Society. Record.

No. 19.

27-8-40.

Recommendation Publication Committee No. 3 of 22-11-40. Resolved that in future separate estimates for printing 500 copies and 1000 copies respectively of the Journal and Memoirs be obtained from the Press to enable the Council to determine the total number of each that should be printed. Accepted by Council.

No. 14.

27-11-40.

REPRESENTATION—

Letter dated the 14th December, 1939, from the Secretary, National Institute of Sciences of India, asking for the Society's nominees to serve as additional Vice-President and additional Member of Council of the Institute for the year 1940. Resolved that Dr. Baini Prashad and Mr. W. D. West be the Society's nominees as Vice-President and Member of Council respectively.

No. 2.

29-1-40.

Nomination of the Society's delegates to the Tenth Session of the All-India Oriental Conference at Tirupati. Record.

No. 9.

27-3-40.

Letter from the Honorary Secretary, National Institute of Sciences of India, requesting the Society to appoint its representatives to serve as Additional Vice-President and Additional Member on the Council of the Institute. 1. Mr. W. D. West be appointed as Additional Vice-President. 2. Major C. L. Pasricha be appointed as Additional Member on the Council.

No. 2.

20-12-40.

STAFF--

Recommendations of the Finance Committee. Accept. Further resolved that daftry Nawab Jan be granted a loan of Rs.35 from General Funds, under the personal guarantee of the Librarian. The loan to be repayable at Rs.3 p.m. and to bear interest at 3% per annum.

No. 9.

29-1-40.

Grant of emergency commission in H.M.'s Land Forces to the Assistant Secretary, R.A.S.B. Resolved that the maximum period for joining, viz. 30 to 60 days, be accepted.

No. 16.

29-1-40.

Application from Pandit Aghornath Bhattacharya for permission for his son to be trained in the general and Sanskrit sections. Grant without any obligation on the part of the Society.

No. 8.

27-3-40.

Recommendations of the Special Committee of the Council re appointment of Assistant Secretary. Accept.

No. 10.

27-5-40.

Grant of gratuity to the retiring Assistant Secretary (Item 1, Special Council, 19th April 1940).

- (1) A bonus of Rs.1,000 to be paid and deduct therefrom the balance due from him to the Society on the 31st May 1940.
- (2) The amount due to him under the rules of the Provident Fund also to be paid.
- (3) The Council records its appreciation of the services rendered by him at a very critical period and wishes him prosperity and success in his new appointment.

No. 11.

27-5-40.

Application dated 17-6-40 from the members of the office staff of the R.A.S.B. re revision of rules regarding holidays. Resolved that the General Secretary be asked to report to the Council the number of holidays which are given by the Government and the Bengal Chamber of Commerce respectively to enable it to fix the number of holidays for the R.A.S.B.

No. 4.

28-6-40.

Letter dated 1-6-40 from Mr. J. C. De, accepting the post of Assistant Secretary to the Society. Record.

No. 13.

28-6-40.

Action against Mr. J. R. Seal by Sir David Ezra in which the Society is made a garnishee. Resolved that the matter be placed before our solicitors.

No. 18.

28-6-40.

Report by the General Secretary re (i) the number of holidays given by the Government of Bengal, (ii) those which are granted by the Bengal Chamber of Commerce, (iii) those given to members of the staff by the Society. Resolved that the practice now followed be continued.

No. 9.

27-8-40.

Report of the resignation by Mr. N. Norman, File-Clerk and Despatcher of the Society. Accept. The post not to be filled up, but a

temporary clerk be appointed to help the Assistant Secretary in classifying and putting the files in order.

No. 17.

27-11-40.

Letter dated 24th November 1940 from Mr. N. Norman to the President for a gratuity. Inform Mr. Norman that no gratuity can be given.

No. 22.

27-11-40.

Recommendation Finance Committee No. 3(c) of 20-12-40. Annual increment of salaries to Staff. Grant as recommended by the Special Enquiry Committee. Accepted by Council.

No. 9.

20-12-40.

Recommendation Finance Committee No. 3(e) of 20-12-40. Winter clothing for Menials. (a) Sanction the over-expenditure up to a limit of Rs.70; (b) in future menials be supplied with winter clothing every three years. Accepted by Council.

No. 9.

20-12-40.

Confirmation of the services of Mr. Trin Chep, Sino-Tibetan clerk, on the grade 50—3—80. Confirm.

No. 15.

20-12-40.

Application from Pt. B. B. Mukherjee, Society's 2nd Pandit, dated 12-12-40 for leave for four days on full pay. Grant.

No. 19.

20-12-40.

VISIT—

Letter dated the 9th January 1940 from the Secretary, Indian Historical Records Commission, thanking the Society on behalf of the Commission and the Government of India for the courtesy shown to the members on the occasion of their visit to the Society's rooms. Record.

No. 5.

29-1-40.

**List of
Patrons,
Officers, Council Members, Members,
Fellows, and Medallists
of the
Royal Asiatic Society of Bengal,
On the 31st December, 1940.**

PATRONS OF THE ROYAL ASIATIC SOCIETY OF BENGAL.

- 1936 H.E. the Most Honourable Lord
Victor Alexander John Hope, K.T.,
P.C., G.M.S.I., G.M.I.E., G.C.I.E.,
D.L., T.D., the Marquess of
Linlithgow, Viceroy and Governor-
General of India.
- 1939 H.E. Sir John Arthur Herbert,
G.C.I.E., Governor of Bengal.

-
- 1910-1916 .. Lord Hardinge of Penshurst, K.G.,
P.C., G.C.B., G.C.M.G., G.C.S.I.,
G.C.I.E., G.C.V.O., I.S.O.
- 1917-1922 .. The Most Hon. the Marquess of Zetland,
P.C., G.C.S.I., G.C.I.E.
- 1922-1927 .. The Right Hon. the Earl of Lytton, P.C.,
G.C.S.I., G.C.I.E.
- 1926-1931 .. The Right Hon. the Viscount Halifax,
K.G., P.C., G.C.S.I., G.C.I.E.
- 1927-1932 .. Colonel Sir Francis Stanley Jackson,
P.C., G.C.I.E.
- 1931-1936 .. The Right Hon. the Earl of Willingdon,
G.M.S.I., G.C.M.G., G.M.I.E., G.B.E.
- 1932-1938 .. The Right Honourable Sir John
Anderson, P.C., G.C.B., G.C.I.E.

OFFICERS AND MEMBERS OF COUNCIL OF THE ROYAL ASIATIC SOCIETY OF BENGAL DURING THE YEAR 1940.

Elections Annual Meeting.

President.

The Hon'ble Mr. Justice John Lort-Williams, Kt., K.C.

Vice-Presidents.

Bt.-Col. R. N. Chopra, C.I.E., M.A., M.B., I.M.S., F.R.A.S.B., F.N.I.
Sir Bijay Chand Mahtab, G.C.I.E., K.C.S.I., I.O.M., Maharajadhiraja
Bahadur of Burdwan.
C. S. Fox, Esq., D.Sc., M.I.Min.E., F.G.S., F.R.A.S.B., F.N.I.
Syamaprasad Mookerjee, Esq., M.A., B.L., D.Litt., Barrister-at-Law.

Secretaries and Treasurer.

General Secretary:—B. S. Guha, Esq., M.A., Ph.D., F.R.A.S.B., F.N.I.
Treasurer:—Baini Prashad, Esq., D.Sc., F.Z.S., F.R.S.E., F.R.A.S.B.,
F.N.I.
Philological Secretary:—S. K. Chatterji, Esq., M.A., D.Lit., F.R.A.S.B.
Joint Philological Secretary:—M. Mahfuz-ul Haq, Esq., M.A.
Natural History Secretaries { Biology:—Kalipada Biswas, Esq., M.A., D.Sc.,
Physical Science:—Meghnad Saha, Esq., D.Sc., F.R.S.,
F.R.A.S.B., F.N.I.
Anthropological Secretary:—H. C. Chakladar, Esq., M.A.
Medical Secretary:—Major C. L. Pasricha, M.A., M.B., B.Ch., M.R.C.S.,
I.M.S., F.N.I.
Library Secretary:—J. N. Mukherjee, Esq., D.Sc., F.C.S., F.R.A.S.B.,
F.N.I.

Other Members of Council.

Percy Brown, Esq., A.R.C.A., F.R.A.S.B.
S. C. Law, Esq., M.A., B.L., Ph.D., F.Z.S., M.B.O.U., F.N.I.
Kalidas Nag, Esq., M.A., D.Litt.
Sir S. Radhakrishnan, Kt., M.A., D.Litt., F.B.A.
M. Z. Siddiqi, Esq., M.A., Ph.D.
W. D. West, Esq., M.A., F.N.I.

APPOINTMENTS, TRANSFERS, AND OTHER CHANGES DURING THE YEAR.

Sir S. Radhakrishnan, appointed an Additional Secretary of Philosophy
from 4-3-40.
Dr. Kalidas Nag, appointed an Additional Secretary of History and
Archaeology from 4-3-40.

**OFFICERS AND MEMBERS OF COUNCIL OF THE
ROYAL ASIATIC SOCIETY OF BENGAL
ELECTED FOR THE YEAR 1941.**

President.

The Hon'ble Mr. Justice Lort-Williams, Kt., K.C.

Vice-Presidents.

Bt.-Col. Sir R. N. Chopra, Kt., C.I.E., M.A., Sc.D., M.D.,
I.M.S., F.R.A.S.B., F.N.I.

C. S. Fox, Esq., D.Sc., M.I.Min.E., F.G.S., F.R.A.S.B., F.N.I.

Syamaprasad Mookerjee, Esq., M.A., B.L., D.Lit., Barrister-at-Law.

Sir S. Radhakrishnan, Kt., M.A., D.Lit., F.B.A.

Secretaries and Treasurer.

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Other Members of Council.

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C. W. Gurner, Esq., B.A., I.C.S.

The Hon'ble Mr. Justice N. G. A. Edgley, M.A., Barrister-at-Law, J.P.

ORDINARY MEMBERS.

R = Resident. N = Non-Resident. F = Foreign. A = Absent. L = Life.

An Asterisk is prefixed to names of Ordinary Fellows of the Society.

Date of Election.		
5-4-22	R	Abdul Ali , ABUL FAIZ MUHAMMAD, M.A., M.B.A.S., F.R.S.L., F.R.G.S., F.R.H.S. 3, Nawab Abdur Rahman Street, Calcutta.
7-3-27	N	Abdul Kadir , A. F. M., M.A. (ALLAHABAD), MAULVIE FAZIL (PUNJAB), MADRASSAH FINAL (CALCUTTA), <i>Professor, Rajshahi College. Rajshahi.</i>
2-11-25	N	Acharya , PARAMANANDA, B.SC., <i>State Archaeologist, Mayurbhanj State, Baripada.</i>
2-3-28	R	Agharkar , SHANKAR PURUSHOTTAM, M.A., PH.D., F.L.S., F.N.I., <i>Sir Rash Behari Ghose Professor of Botany, Calcutta University. 35, Ballygunge Circular Road, Calcutta.</i>
3-2-36	N	Ahmad , ALFAZUDDIN, KHAN BAHADUR, <i>Late Offg. Assistant Director of Public Instruction for Muhammedan Education, Bengal. Dhalhora, Tamluk, Midnapur.</i>
1-1-34	N	Ahmad , MIAN JAMAL-UD-DIN, B.A., B.T., <i>Member, Bureau of Education, Afghanistan. 2, Andrabi, Kabul, Afghanistan.</i>
6-6-17	N	Aiyangar , K. V. RANGASWAMI, RAO BAHADUR, M.A., <i>Late Director of Public Instruction, Travancore. Vasumali Vilas, Rangaswami Road, Mylapore, Madras.</i>
6-12-26	N	*Aiyangar , S. KRISHNASWAMI, M.A., PH.D., M.B.A.S., F.R.HIST.S., F.R.A.S.B., <i>Rajasevasakta, Professor, University of Madras. 'Sripadam', 143, Brodies Road, Mylapore, Madras, S.</i>
1-12-20	N	Akbar Khan , THE HON'BLE MAJOR NAWAB SIR MOHAMMED, K.B.E., C.I.E., <i>Khan of Hoti. Hoti, N.-W.F.P.</i>
5-6-39	R	Ali , S. SHAMSER, <i>Insurance Underwriter. 3, Bright Street, Ballygunge, Calcutta.</i>
4-4-38	R	Anderson , J. 15, Park Street, Calcutta.
3-7-12	F	Andrews , EGBERT ARTHUR, B.A. c/o The Royal Empire Society, Northumberland Avenue, London, W.C.
6-5-40	R	Asadullah , KHALIFA MOHAMMAD, KHAN BAHADUR, <i>General Central Service Class I, Librarian, Imperial Library, 6, Esplanade East, Calcutta.</i>
3-3-30	L	Ashton , HUBERT SHORROCK, <i>Merchant. Trueloves, Ingatestone, Essex, England.</i>
3-9-34	R	Auden , JOHN BICKNELL, M.A. (CANTAB.), F.G.S., F.N.I., <i>Assistant Superintendent, Geological Survey of India. 27, Chowringhee, Calcutta.</i>
3-11-30	R	Austin , GEORGE JOHN, <i>Sanitary Engineer, Messrs. J. B. Norton & Sons, Ltd. Norton Building, Lalbazar, Calcutta.</i>
4-4-17	N	Awati , P. R., B.A. (CANTAB.), D.I.C., F.N.I., I.E.S., <i>Professor of Zoology, Royal Institute of Science. Mayo Road, Fort, Bombay.</i>
1-5-39	A	Ayrton , SHAVUX MUNCHERSHAW, <i>Assistant, Messrs. Shaw Wallace & Co., Madon Mansions, 275-C, Bow Bazar, Street, Calcutta.</i>

Date of Election.		
3-3-14	L	* Bacot, J. , F.R.A.S.B. Boulevard Saint-Antoine, 61, Versailles Seine-et-Oise, France.
7-9-36	R	Bagchi, K. N. , RAI BAHADUR, B.SC., M.B. (CAL.), F.I.C. (LOND.), D.T.M. (CAL. & L'POOL), <i>Chemical Examiner to the Government of Bengal</i> . Medical College, Calcutta.
1-11-26	R	Bagchi, PROBODH CHANDRA , M.A., DR.-ES-LETTERS (PARIS), <i>Member of the A.S. of Paris; Lecturer, Calcutta University</i> . 9, Rustomjee Street, Ballygunge, Calcutta.
1-3-26	R	Bagnall, JOHN FREDERICK , B.SC., A.M.I.MECH.E., A.M.I.E.E., A.M.INST.C.E., <i>Consulting Engineer, Messrs. Macneill & Co.</i> 2, Fairlie Place, Calcutta.
2-4-24	N	* Bahl, K. N. , D.SC., D.PHIL., F.N.I., F.R.A.S.B., <i>Professor of Zoology, Lucknow University</i> . Badshabagh, Lucknow.
1-8-38	R	Banerjee, J. N. , M.A., <i>Lecturer, Calcutta University</i> . 28, Manoharpukur Road, Calcutta.
6-2-18	N	Banerjee, NARENDRA NATH , C.E., A.M.I.E., <i>Chief Engineer, Posts & Telegraphs</i> , Simla (38/1, Gariahat Road, Ballygunge, Calcutta).
5-3-24	R	Banerjee, P. N. , M.A. (CANTAB.), A.M.I.E., F.C.P., <i>Civil Engineer</i> . 12, Mission Row, Calcutta.
7-12-36	R	Banerjee, S. , I.C.S. Collector's House, Hooghly.
3-12-23	R	Barwell, N. F. , M.C., M.A., IT.-COL. (RETD.), <i>Barrister-at-Law</i> . 6, Middleton Street, Calcutta (and) Aylmerton House, Aylmerton, Norfolk, England.
2-10-39	N	Bastin, REGINALD WALTER , I.C.S., <i>Settlement Officer</i> , Mymensingh, E.B.Rly.
7-12-36	R	Basu, INDUBHUSAN , M.D. (CAL.), <i>Medical Practitioner, Associate Professor of Medicine and Visiting Physician, Carmichael Medical College</i> . 19, Vivekananda Road, Calcutta.
6-2-39	R	Basu, JNANENDRA NATH , VIDYALANKAR, <i>Member, Benares Hindu University Court, Fellow, Theosophical Society, Landholder, Director, Messrs. Thacker Spink & Co.</i> 9, Park Lane, Calcutta.
3-12-24	R	Basu, JATINDRA NATH , M.A., M.L.C., <i>Solicitor</i> . 14, Baloram Ghose Street, Calcutta.
5-2-40	R	Basu, MRIGANKA MAULI , <i>Member of the Indian Civil Service, Special Magistrate</i> , Howtah.
1-3-26	R	Basu, NARENDRA KUMAR , M.L.C., <i>Advocate, High Court</i> . 12, Ashu Biswas Road, Bhawanipore, Calcutta.
2-10-39	N	Basu Mazoomder, WOOSHACUR , B.L., M.R.A.S., F.R.S.A. (LOND.), <i>Bengal Civil Service (Judicial), Munsif</i> . Barisal, Dist. Bakharganj (Bengal).
7-7-09	N	Bazaz, RANGNATH KHEMRAJ , <i>Proprietor, Shri Venkateshwar Press</i> . 7th Khetwadi, Bombay No. 4.
4-3-40	N	Bell, FRANK OWEN , <i>Indian Civil Service, S.O.</i> , Dinajpur.
7-5-34	R	Bent, WILLIAM ANTONY , <i>Assistant, Messrs. George Henderson & Co., Ltd.</i> 101/1, Clive Street, Calcutta.
4-3-25	R	Benthall, SIR EDWARD C. , KT., <i>Merchant</i> . 37, Ballygunge Park, Calcutta.
7-4-09	I.	* Bentley, CHARLES A. , C.I.E., M.B., D.P.H., D.T.M. & H., F.A.S.B., <i>Professor of Hygiene</i> . University of Egypt, Cairo.
6-1-36	N	Berkeley-Hill, OWEN , A.R., M.A., M.D., B.CH. (OXON), M.R.C.S. (ENGLAND), D.T.M. (LOND.), LT.-COL., I.M.S. (RETD.). Station View, Ranchi.

Date of Election.		
4-6-28	N	Bhadra, SATYENDRA NATH. RAI BAHADUR, M.A., <i>Principal, Jagannath Intermediate College. Nayabazar, Dacca.</i>
1-8-17	R	*Bhandarkar, DEVADATTA RAMKRISHNA, M.A., PH.D., <i>F.R.A.S.B. 2/1, Lovelock Street, Ballygunge, Calcutta.</i>
6-5-40	N	Bharucha, FARROKH E., Merchant, <i>Canada Building, Hornby Road, Bombay.</i>
5-4-20	N	Bhatia, M. L., M.Sc., <i>Lecturer in Zoology, Lucknow University. Lucknow.</i>
7-7-24	L	Bhattacharyya, BINOYTOSH, M.A., PH.D., <i>Rajaratna. General Editor, Gaekwad's Oriental Series, and Librarian, Oriental Collections, Baroda State. Baroda.</i>
6-9-37	N	Bhattacharya, N. C., <i>Vice-Chairman, Birnagar Municipality. Birnagar, Nadia.</i>
4-6-28	N	Bhattacharya, NALINI KANTA, M.A., PH.D., <i>Curator, Dacca Museum. Ramna, Dacca.</i>
6-4-31	R	Bhose, JOTISH CHANDER, M.A., B.L., <i>Advocate, Calcutta High Court. 24A, Ray Bagan Street, Calcutta.</i>
5-2-34	A	Bhuyan, SURYYA KUMAR, RAI BAHADUR, M.A., B.L., A.E.S., <i>Honorary Provincial Director of Historical and Antiquarian Studies, Assam; Professor, Cotton College, Gauhati, Assam.</i>
5-3-28	R	Biswas, THE HON'BLE MR. JUSTICE CHARU CHANDRA, C.I.E., M.A., B.L., <i>Judge, High Court. 58, Puddopukur Road, P.O. Elgin Road, Calcutta.</i>
1-8-23	L	Biswas, KALIPADA, M.A., D.SC. (EDIN.), F.R.S.E., <i>Superintendent, Royal Botanic Garden. Botanic Garden P.O., Calcutta.</i>
3-1-27	N	Bivar, HUGH GODFREY STUART, I.C.S., <i>District and Sessions Judge. Faridpur.</i>
4-11-35	N	Bor, N. L., M.A., D.SC., I.F.S., <i>Forest Botanist, Forest Research Institute. New Forest, Dehra Dun.</i>
6-7-25	R	Bose, MANMATHA MOHAN, M.A., <i>Professor Emeritus, Scottish Church College. 19, Gokul Mitra Lane, Hatkhola, Calcutta.</i>
7-12-36	N	Bose, AMBUJ NATH, M.B.E., M.D. (LAUSANNE), F.R.C.P. (EDIN. & LOND.), LT.-COL., I.M.S. <i>Medical College, Patna.</i>
4-12-30	R	Bose, DEBENDRA MOHAN, M.A., PH.D., F.N.I., <i>Director, Bose Research Institute, 93, Upper Circular Road, Calcutta.</i>
7-8-30	R	Bose, GIRINDRASHEKHAR, M.B., D.SC., F.N.I., <i>Professor of Psychology and Head of Department of Psychology, Calcutta University. 14, Parsi Bagan Lane, P.O. Amherst Street, Calcutta.</i>
2-3-31	N	Bose, SUDHANSU KUMAR, B.SC. (CAL.), A.R.S.M., B.SC. (MINING) (LONDON), <i>Professor of Mining and Surveying. Indian School of Mines, Dhanbad.</i>
2-1-30	R	Bose, SUDHANSU MOHAN, M.A., LL.B. (CANTAB.), <i>Barrister-at-Law, Member, Public Service Commission, Bengal. 3, Federation Road, P.O. Amherst Street, Calcutta.</i>
2-11-36	N	Bothra, SUBHKARAN SINGH. <i>Landholder and Student. Kundigar Bhairon, Jaipur City.</i>
4-5-31	R	Bottomley, JOHN MELLOR, B.A. (OXON.) I.E.S., <i>Director of Public Instruction, Bengal. 1, Sunny Park, Ballygunge, Calcutta.</i>
5-12-32	A	Boyle, CECIL ALEXANDER, MAJOR, D.S.O., <i>Adviser in Languages and Secretary to the Board of Examiners. Army Headquarters, Simla.</i>

Date of Election.		
3-12-34	R	Brahmachari, PHANINDRA NATH, M.Sc., M.B. 19, Loudon Street, Calcutta.
1-1-08	L	*Brahmachari, SIR UPENDRA NATH, KT., RAI BAHADUR, M.A., PH.D., M.D., F.S.M.F., F.N.I., F.R.A.S.B. 19, Loudon Street, Calcutta.
7-11-27	N	Brahmachary, SARAT CHANDRA, RAI BAHADUR, M.A., B.T. Kasba Road, Ballygunge, P.O. Dhakuria, 24-Pergs.
6-1-36	R	Brocke, A. G., D.Sc. (DOCTOR PHILOSOPHIE NATURALIS) (JENA), <i>Branch Manager, Pharmaceutical Department, 'Bayer'.</i> 52/4/1, Ballygunge Circular Road, Calcutta.
3-7-07	L	*Brown, JOHN 'COGGIN, O.B.E., D.Sc., F.G.S., M.I.M.E., M.INST.M.M., M.I.E., F.R.A.S.B. c/o Messrs. Grindlay & Co., 54, Parliament Street, Westminster, London, S.W.1.
6-10-09	R	*Brown, PERCY, A.R.C.A., F.R.A.S.B., <i>Curator, Victoria Memorial.</i> Calcutta.
4-3-40	N	Bruce, ALEXANDER EDWIN ROBERT, B.A., A.C.P., M.R.S.T., M.R.A.S., F.R.G.S., A.R.I.P.H.H., <i>Principal, Rathlin Hall School, Darjeeling.</i>
8-1-96	F	*Burn, SIR RICHARD, KT., C.S.I., F.R.A.S.B. 9, Staverton Road, Oxford, England.
3-12-34	F	Burt, SIR BRYCE CHUDLEIGH, KT., C.I.E., M.B.E., B.Sc., I.A.S., F.N.I. Bryn Dene, Allanson Road, Rhos-on-Sea, Colwyn Bay, N. Wales.
2-4-13	A	Calder, CHARLES CUMMING, B.Sc., F.N.I., F.L.S., <i>Superintendent, Royal Botanic Garden.</i> Sibpur, Howrah.
4-12-39	R	Cameron, REV. ALLAN, M.A., PH.D., <i>Principal, Scottish Church College.</i> 3 and 4, Cornwallis Street, Calcutta.
4-11-29	F	Campbell, SIR GEORGE R., KT., Westcroft, Pyrford, Surrey, England.
4-7-38	R	Carstairs, ANDREW McLAREN, M.A., <i>Bengal Chamber of Commerce.</i> Royal Exchange Buildings, 2, Clive Street, Calcutta.
3-2-36	F	Catto, OF CAIRNCATTO, THE RIGHT HON'BLE LORD, BART. 'Woodlands', Clomp Hill, Stanmore, Middlesex, England.
1-9-20	R	Chakladar, HARAN CHANDRA, M.A. 28/4/2, Srimohan Lane, Kalighat, Calcutta.
7-3-32	R	Chuckerbutty, KHIRODE BEHARI, <i>Engineer and Manufacturer.</i> 7, Hindusthan Park, P.O. Ballygunge, Calcutta.
4-7-27	R	Chakravarti, CHINTAHARAN, M.A., KĀVYATĪRTHA, <i>Lecturer, Bethune College.</i> 28/3, Sahanagar Road, Kalighat, Calcutta.
3-2-30	N	Chakravarti, M. N., M.Sc., A.T.S. 'Gitanjali'. 37, Mayo Garden, Lahore.
3-1-27	N	Chakravarti, NIRANJANPRASAD, M.A., PH.D. (CANTAB.), <i>Government Epigraphist.</i> Office of the Government Epigraphist, Ootacamund, Nilgiris, S. India.
7-2-38	R	Chakravarti, P. K., M.A., B.L., <i>Advocate, High Court.</i> 6, Basanta Bose Road, Bhowanipore, Calcutta.
6-2-39	N	Chakravarti, PROF. RASH MOHAN, PH.B., PURANBATNA, VIDYAVINODE, <i>Superintendent, Rammala Chhatravas.</i> Comilla, Bengal.
5-6-33	N	Chakravarti, SUSIL KUMAR, M.A., <i>Zemindar.</i> Cooch Behar (Cooch Behar State).

Date of Election.		
1-9-20	R	*Chanda, RAMAPRASAD, RAI BAHADUR, B.A., F.R.A.S.B. 37/1, Manoharpukur Road, Kalighat, Calcutta.
3-1-06	L	Chapman, JOHN ALEXANDER. 32, Lavington Road, West Ealing, London, W.3.
7-5-28	R	Chatterjea, SIR NALINI RANJAN, KT., M.A., B.L., <i>Retired Judge and sometime acting Chief Justice, Calcutta.</i> 91A, Harish Mukherjee Road, Bhawanipore, Calcutta.
7-2-27	N	Chatterjee, ASHOKE, B.A. (CAL.), B.A. (CANTAB.). <i>Labour Welfare Office.</i> Burnpur, Via Asansol.
1-7-40	R	Chatterjee, A. B., M.A., <i>General Manager, Metropolitan Printing & Publishing House Ltd.,</i> 4-B, Council House Street, Calcutta.
27-10-15	F	Chatterjee, SIR ATUL CHANDRA, K.C.I.E., K.C.S.I., <i>Late High Commissioner for India.</i> Withdean, Cavendish Road, Weybridge, Surrey, England.
2-3-36	R	Chatterjee, MANOMOHAN, B.SC. (CAL.), PH.D. (LOND.), A.R.C.S., D.I.C., <i>Professor of Geology, Presidency College.</i> 170/2, Lower Circular Road, Calcutta.
1-10-20	R	Chatterjee, NIRMAL CHANDRA, <i>Barrister-at-Law.</i> 47/1, Theatre Road, Calcutta.
4-7-27	R	Chatterjee, PATITPABON, M.A., B.L., <i>Vakil, High Court.</i> 84, Harrison Road, Calcutta.
3-12-34	N	Chatterjee, SISIR CHANDRA, M.D. (EDIN.), M.R.C.P. (EDIN.), D.P.H. (EDIN.), <i>Chief Medical & Health Officer.</i> Headquarters Offices, N.W. Ry., Lahore.
2-9-40	R	Chatterji, BANKIM CHANDRA, M.SC., (GOLD MEDALLIST), <i>Member of the Calcutta Mathematical Society, Research Scholar, Calcutta University.</i> 15, Vidyasagar Street, Calcutta.
4-6-34	N	Chatterji, BIJAN RAJ, PH.D. (LONDON), D.LITT. (PUNJAB), <i>Professor of History, Meerut College.</i> Meerut.
5-1-31	R	Chatterji, DURGACHARAN, M.A., <i>Lecturer in Sanskrit, Bethune College.</i> 39, Jatin Das Road, Kalighat, Calcutta.
7-6-11	R	Chatterji, KARUNA KUMAR, LT.-COL., I.T.F., M.C., V.H.A.S. 15, Camac Street, Calcutta.
7-5-28	R	Chatterji, KEDAR NATH, B.SC. (LONDON), A.E.C.S. (LONDON). 43, Wellesley Street, Calcutta.
6-8-24	R	*Chatterji, SUNITI KUMAR, M.A. (CAL.), D.LITT. (LONDON), F.R.A.S.B. <i>Khair-a Professor of Linguistics, Calcutta University.</i> 'Sudharma', 16, Hindusthan Park, (off Rashbihari Avenue East End), Ballygunge, Calcutta.
2-3-36	R	Chatterji, MRS. TUHINIKA, M.A., KAVYATIRTHA, <i>Research Scholar, Examiner, Calcutta University.</i> 5, Wood Street, Calcutta.
5-11-24	R	Chattopadhyay, K. P., M.SC., <i>Professor, Calcutta University.</i> 2, Palm Place, Ballygunge, Calcutta.
2-11-25	N	Chattopadhyaya, KSHETRESA CHANDRA, M.A., <i>Lecturer in Sanskrit.</i> Allahabad University, Allahabad.
4-4-38	R	Chaudhuri, MRS. ROMA, M.A., D.PHIL. (OXON). 3, Federation Road, Calcutta.
4-11-35	R	Chaudhuri, S. N. 52, Ballygunge Circular Road, Calcutta.
5-12-23	L	Chopra, B. N., D.SC., F.N.I., F.L.S., <i>Assistant Superintendent, Zoological Survey of India.</i> Indian Museum,* Calcutta.

Date of Election.		
1-2-22	R	*Chopra, R. N., C.I.E., M.A., SC.D., M.D. (CANTAB.), F.R.O.P., F.N.I., F.R.A.S.B., BREVET-COL., I.M.S., Professor of Pharmacology. School of Tropical Medicine and Hygiene, Chittaranjan Avenue, Calcutta.
5-12-27	L	Chowdhury, SIR CHHAJURAM, KT., C.I.E., M.L.C. 21, Belvedere Road, Calcutta.
2-4-28	R	Chowdhury, RAI JATINDRANATH, Zemindar. 36, Russa Road, Tollygunge, Calcutta.
3-7-07	L	*Christie, WILLIAM ALEXANDER, KYNOCH, B.SC., PH.D., M.INST.M.M., F.R.A.S.B. Secretariat, Principal Supply Officers' Committee (India), Defence Department, Simla.
2-2-31	R	Clough, JOHN, Barrister-at-Law. 17, Store Road, Ballygunge. Calcutta.
5-5-30	F	Cooper, G. A. P. 29, Eccleston Street, Eaton Square, London, S.W. 1.
4-11-29	L	*Cotter, GERALD DE PURCELL, B.A., SC.D. (DUBLIN), M.INST.M.M., F.G.S., F.R.A.S.B. 'Fallowfield', Manor Road, Penn., Bucks., England.
4-3-40	R	Crawford, C. E. J., B.A., B.SC., Technical Staff, Imperial Chemical Industries (India) Ltd., 18, Strand Road, Calcutta.
2-11-25	R	Crookshank, HENRY, B.A., B.A.I. (DUBLIN), F.N.I., Assistant Superintendent, Geological Survey of India. 27, Chowringhee, Calcutta.
6-3-39	N	Culshaw, REV. WESLEY JAMES, Methodist Minister. P.O. Serenga, Dist. Bankura.
7-3-32	R	Darbari, M. D., Incorporated Accountant, S. B. Billimoria & Co., Ltd. 100, Clive Street, Calcutta.
4-3-25	R	Das, AJIT NATH, RAI BAHADUR, M.R.A.S., F.Z.S., Zemindar. 24, South Road, Entally, Calcutta.
5-12-39	N	Das-Gupta, C. C., M.A., Archaeological Survey of India. Western Circle, Poona.
1-3-26	R	Datta, HIRENDRA NATH, M.A., B.L., Solicitor, High Court. 139, Cornwallis Street, Calcutta.
6-8-24	L	Davies, L. M., LT.-COL., M.A. F.R.S.E., F.R.A.I., F.G.S. 8, Garscube Terrace, Murrayfield, Edinburgh, 12, Scotland.
4-3-29	R	De, J. C., M.B., LT.-COL., I.M.S. 11, Rowland Road, Calcutta.
3-6-40	R	De, JATIS CHANDRA, M.A., B.L. (CAL.), M.A. (LOND.), Colonial Educational Service, 11, Ray Street, Elgin Road P.O., Calcutta.
19-9-95	L	De, KIRAN CHANDRA, C.I.E., B.A., I.C.S. (RETD.), Manager, Nawab Bahadur of Murshidabad Estate. Lalbagh, Murshidabad.
4-3-25	R	Deb, KSHITINDRA, RAI MAHASAI. 21/E, Rani Sankari Lane, Kalighat, Calcutta.
5-12-27	L	Dechhen, H.H. MAHARANI KUNZANG, Maharani of Sikkim. Gangtok, Sikkim.
5-5-30	N	Deo, SIR PRATAP CHANDRA BHANJ, K.C.I.E., Maharajah, Ruler of Mayurbhanj State. P.O. Baripada, Mayurbhanj, B.N.R.
5-11-34	R	Dey, MUKUL, A.R.C.A. (LOND.), M.C.S.E. (U.S.A.), F.R.S.A., etc., Principal, Govt. School of Art; Officer in charge, Art Section Keeper of Govt. Art Gallery; Trustee, Indian Museum. 28, Chowringhee, Calcutta.

Date of Election.		
4-5-10	L	Dhavia , THE HON'BLE MR. JUSTICE SHANKAR BALAJI, B.A., I.C.S., <i>Judge, Patna High Court. Patna.</i>
4-8-20	N	*Dikshit , KASHINATH NARAYAN, M.A., F.R.A.S.B. o/o The Office of the Director-General of Archaeology, New Delhi.
5-1-98	R	Dods , WILLIAM KANE, <i>Agent Hongkong and Shanghai Banking Corporation. 6, Minto Park, Alipur, Calcutta.</i>
2-7-02	L	Doxey , FREDERICK. 'Ballygunge', Cooden Drive, Bexhill-on-Sea, Sussex, England.
7-11-32	R	Driver , DARAB CURSETJI, M.A. (CANTAB.), <i>Barrister-at-Law, Constituted Attorney to Messrs. Tata & Sons, Ltd., Managing Agents for The Tata Iron & Steel Co., Ltd. 87/C, Park Street, Calcutta.</i>
6-6-38	N	Dudhoria , NABA KUMAR SING, <i>Zemindar and Banker. Azimganj. Dt. Murshidabad.</i>
6-9-37	A	Durniz-Podewills , COUNT, <i>Consul-General for Germany. 34, Park Street, Calcutta.</i>
2-1-33	R	Dutch , ROBERT AUSTEN, B.A. (CANTAB.), I.C.S., <i>District Judge. Alipore, Calcutta.</i>
3-7-33	R	Dutta , GURU SADAY, <i>Barrister-at-Law, I.C.S. 12, Loudon Street, Calcutta.</i>
30-9-35	R	Dutt , MOHENDRA NATH, L.E., <i>Consulting Engineer. 12, Kailas Bose Lane, Howrah.</i>
5-12-32	R	Dutt , NALINAKSHA, M.A., PH.D., D.LITT. (LOND.), <i>Lecturer, Calcutta University. 39, Badur Bagan Row, P.O. Amherst Street, Calcutta.</i>
1-7-40	R	Dutt , SUDHIR CHUNDER, CAPT., M.B., A.I.R.O., <i>Ophthalmic Surgeon, Mayo Hospital, 214, Lower Circular Road, Calcutta.</i>
2-12-40	R	Edgley , HON'BLE MR. JUSTICE NORMAN GEORGE ARMSTRONG, <i>Puisne Judge, Calcutta High Court, 9/1, Middleton Street, Calcutta.</i>
1-11-38	N	Eekhout , JHR. P.J., <i>Vice-Consul for Netherlands. Clarke's Hotel, Simla.</i>
5-1-31	L	Evans , PERCY, B.A. (CANTAB.), F.G.S., <i>Geologist. o/o The Burma Oil Co., Digboi, Assam.</i>
6-2-28	L	Ezra , SIR DAVID, KT., F.Z.S., M.B.O.U. 3, Kyd Street, Calcutta.
2-5-38	R	Faroqui , NAWAB SIR K. G. M., KT., <i>of Ratanpur. 20/1, Store Road, Calcutta.</i>
2-12-29	R	Fawcus , LOUIS REGINALD, C.I.E., B.A. (CANTAB.), <i>Indian Civil Service, United Service Club, Calcutta.</i>
3-8-04	L	*Fermor , SIR LEWIS LEIGH, KT., O.B.E., M.INST.M.M., D.SC., A.R.S.M., F.G.S., F.R.S., F.N.I., F.R.A.S.B., <i>Late Director, Geological Survey of India. o/o Messrs. Lloyds Bank, Ltd., 6, Pall Mall, London.</i>
5-2-40	F	Fleming , ANDREW, <i>Rand Club, Johannesburg.</i>
4-3-40	R	Foster , ALBERT RIDGELEY, B.SC., A.I.C., <i>Agricultural Chemist and Agricultural Expert, o/o Imperial Chemical Industries (India) Ltd., 18, Strand Road, Calcutta.</i>
5-11-13	L	*Fox , CYRIL S., D.SC. (BIRM.), M.I.M.E., F.G.S., F.N.I., F.R.A.S.B. <i>Geological Survey of India, 27, Chowringhee, Calcutta.</i>
5-11-28	R	Galstaun , JOHN CARAPIET, O.B.E., <i>Merchant and Landholder. 234/4, Lower Circular Road, Calcutta.</i>

Date of Election.		
1-11-26	R	Galstaun , SHANAZAN, G., M.A., D.M.R.E., M.R.C.S., L.R.C.P., <i>Medical Practitioner, Radiologist, Medical College Hospital</i> . 34, Chowringhee Road, Calcutta.
6-10-09	R	* Gangoly , ORDHENDRA COOMAR, B.A., F.R.A.S.B. 2, Asutosh Mukherjee Road, Calcutta.
5-11-34	R	Gee , EDWARD ROWLAND, M.A. (CANTAB.), F.N.I., F.G.S., <i>Assistant Superintendent, Geological Survey of India</i> . 27, Chowringhee, Calcutta.
2-1-33	N	George , JAMES, B.A. (CANTAB.), I.C.S., <i>Joint Magistrate and Dy. Collector</i> . Dacca.
5-2-40	N	Ghatak , INDU BHUSHAN, B.A. (CAL.), C.T.E. (DAC.), MED. (AMB.), DIP. LBR. (B.L.A.), <i>Examiner, Patna University, Lecturer, St. John Ambulance Association, Ex-member, Subordinate Educational Service, C.P., Associate, Red Cross Society, Headmaster, Raj High School, Garh Banaili P.O., (Purnea)</i> .
6-2-33	L	Ghatak , JYOTISH CHANDRA, M.A. (TRIPLE), SAHITYA SARASWATI, JYOTISH-SAGARA, <i>Professor</i> . 4, Boloram Bose Ghat Road, Bhawanipore, Calcutta.
7-5-28	R	* Ghosal , UPENDRA NATH, M.A., PH.D., F.R.A.S.B., <i>Professor of History, Presidency College</i> . 35, Badur Bagan Row, Calcutta.
5-4-26	R	Ghose , BIMAL CHANDRA, <i>Barrister-at-Law</i> . 27/1, Harish Mukherjee Road, Calcutta.
7-1-29	R	Ghose , THE HON'BLE MR. JUSTICE MOHIM CHANDRA, B.A. (CAL.), M.A. (CANTAB.), I.C.S., <i>Barrister-at-Law (Inner Temple), Judge, High Court</i> . 4A, Little Russell Street, Calcutta.
3-12-24	R	Ghose , SUSHIL CHANDRA, B.A., <i>Deputy Magistrate</i> . 1, Sikdarbagan Street, Calcutta.
7-9-36	R	Ghosh , J., M.A. (CAL.), PH.D. (EDIN.), F.N.I., <i>Professor of Mathematics, Presidency College</i> . 9, Satyen Dutta Road, Calcutta.
4-9-39	N	Ghosh , J. C., D.SC., F.N.I., <i>Director, The Indian Institute of Science</i> . Bangalore.
2-4-24	R	Ghosh , K., D.T.M., D.P.H. (CANTAB.), L.M.S., <i>Medical Practitioner</i> . 45, Creek Row, Calcutta.
7-3-27	R	Ghosh , PHANINDRA NATH, M.A., PH.D., SC.D. (PADUA), F.INST.P., <i>Sir Rashbehary Ghosh Professor of Applied Physics, University of Calcutta</i> . 92, Upper Circular Road, Calcutta.
2-9-40	R	Ghosh , PRASHANTA KUMAR, <i>Visiting Physician, Carmichael Medical College Hospital, Belgachia, Calcutta</i> , P.7/1, Chittaranjan Avenue, P.O. Beadon Street, Calcutta.
4-9-12	R	Ghosh , TARAPADA, <i>Zemindar</i> . 14, Paddapukur Street, Kidderpore, Calcutta.
1-2-26	R	Ghuznavi , SIR ABDUL HALIM, KT., M.L.A., <i>Zemindar</i> . 18, Canal Street, Entally, Calcutta.
6-8-28	R	Ghuznavi , ISKANDER S. K., <i>Zemindar</i> . 21, Syed Ameer Ali Avenue, Circus P.O., Calcutta (and) Dilduar, Mymensingh.
7-12-36	R	Gillespie , ANDREW DOLLAR, <i>Chemist and Senior Partner, Messrs. Bathgate & Co</i> . 17, Old Court House Street, Calcutta.
5-3-28	R	Gooptu , DWIJENDRA NATH, <i>Medical Practitioner and Landholder</i> . 5, Middleton Street, Calcutta.
7-9-10	N	* Gravelly , FREDERIC HENRY, D.SC., F.N.I., F.R.A.S.B. <i>Museum House, Egmore, Madras</i> .

Date of Election.		
6-5-40	R	Griffiths, WALTER GERALDSON , B.SC. (CALIF.), B.D. (DREW), M.A. (NEW YORK), PH.D. (DREW), <i>Missionary</i> , 13, Wellington Sqr., Calcutta.
4-3-35	R	Groth, EDWARD , M., <i>American Consul</i> . American Consulate General, 9, Esplanade Mansions, Esplanade, Calcutta.
4-2-25	L	*Guha, B. S. , M.A., PH.D. (HARVARD), F.N.I., F.R.A.S.B., Indian Museum, Calcutta.
5-3-19	N	Gupta, SIVAPRASAD . Seva Upavana, Benares City.
5-8-15	R	Gurner, CYRIL WALTER , B.A. (OXON), I.C.S., <i>Chairman, Improvement Trust</i> . 4, Theatre Road, Calcutta.
5-2-34	R	Haldar, BHARATI VIKAS , M.A., B.L., <i>Advocate, High Court</i> . 47, Haldarpara Road, Kalighat, Calcutta.
6-1-30	N	Haldar, SUDHINDRA KUMAR , M.A., I.C.S., <i>District and Sessions Judge, Khulna</i> .
6-9-37	N	Haïm, ABDUL , DR., M.A., <i>Lecturer in History, Muslim University</i> . Aligarh.
2-4-24	R	Haq, M. MAHFUZ-UL , M.A., <i>Professor, Presidency College</i> . 8/B, Dargah Road, Park Circus, Calcutta.
1-5-12	A	Harley, ALEXANDER HAMILTON , M.A., I.E.S., <i>Late Principal, Islamia College</i> . 19, Wellesley Square, Calcutta.
1-2-26	F	Harris, H. G. Gunnespory Avenue, Ealing, London.
2-4-28	R	Harris, LAWRENCE ERNEST , <i>Engineer, Manager for India, Messrs. Sulzer Brothers</i> . 4, Lyons Range, Calcutta.
4-3-40	N	Harshé, RAMKRISHNA GANESH , B.A. (TILAK), D.LIT. (PARIS), <i>Registrar, Deccan College Post-Graduate and Research Institute, Poona</i> .
4-3-40	N	Haryana, RAM ADHAR , B.A., <i>Dy. Jailor (U.P. Jails), District Jail, Etah, (U.P.)</i> .
7-8-39	N	Helland, BERNHARD ALVIN , M.A. (MINNESOTA), B.D. (AUGSBURG SEMINARY, U.S.A.), <i>Missionary, Principal, Kaerabani Boys' Middle English and Guru Training School, Kaerabani, via Dumka, Santal Parganas</i> .
6-8-28	N	*Heron, A. M. , D.SC. (EDIN.), F.G.S., F.R.G.S., F.N.I., F.R.S.E., <i>Late Director, Geological Survey of India. Mines and Geology Office, Hyderabad, Deccan</i> .
7-6-11	L	*Hidāyat Hosain, MUHAMMAD, SHAMS 'UL-'ULAMA, KHAN BAHADUR , PH.D., F.R.A.S.B. 172/26, Lower Circular Road, Calcutta.
4-11-35	R	Hirtzel, MICHAEL ARTHUR FREDERICK , B.A. (TRINITY COLLEGE, OXFORD), <i>Mercantile Assistant, Macneill & Co</i> . 2, Fairlie Place, Calcutta.
1-4-25	R	Hobbs, HENRY, MAJOR, V.D. , <i>Merchant</i> . 9, Old Court House Street, Calcutta.
7-3-27	A	Hopkinson, ARTHUR JOHN , I.C.S., <i>Secretary to the Government, N.-W.F. Province. Peshawar, N.-W.F.P.</i>
2-11-21	L	*Hora, SUNDER LAL, RAI BAHADUR , D.SC., F.Z.S., F.R.S.E., F.N.I., F.R.A.S.B. <i>Zoological Survey of India, Indian Museum, Calcutta</i> .
6-6-23	L	*Howard, SIR ALBERT, KT. , C.I.E., M.A., F.R.A.S.B., <i>Late Director, Institute of Plant Industry, Indore, and Late Agricultural Adviser to States in Central India</i> . 14, Liskeard Gardens, Blackheath, London, S.E. 3.
5-2-40	R	Huda, SYED SHAMSUL , <i>Research Scholar (Anjuman Taragqee Urdu, Delhi)</i> , 3B, Tattolla, Entally, Calcutta.

Date of Election.		
7-3-32	N	Hughes, ARTHUR, B.A. (MANCHESTER), Indian Civil Service, District Magistrate. Faridpure.
6-8-34	N	Husain, SYED ATA, M.A. (CAL.), C.E. (ROORKEE), Retired Superintending Engineer, Hyderabad State. Mohalla Lingumpally, Hyderabad, Deccan.
6-6-23	A	*Hutton, J. H., C.I.E., I.C.S., M.A., D.SC., F.R.A.S.B. University Museum of Archaeology and Ethnology, Downing Street, Cambridge, England.
1-2-11	L	Insch, JAMES. 18, Beechwood Avenue, Boscombe, Hants, England.
2-12-40	R	Isch-Wall, CLAUDE, LICENCIÉ-ÈS-SCIENCE (MATHÉMATIQUES ET PHYSIQUES) Lieutenant British Army, Grand Hotel, Calcutta.
2-5-38	R	Jacob, J. R., Director, Messrs. B. N. Elias & Co., Merchant and Landholder. Norton Buildings, Old Court House Corner, Calcutta.
1-7-40	R	Jagannath, SRI, Officer, Indian State Rlys., Suite No. 12A, 53, Chowringhee Road, Calcutta.
6-6-27	I	Jain, BALDEODAS, Merchant and Banker. 21, Armenian Street, Calcutta.
2-2-21	R	Jain, CHHOTE LAL, M.R.A.S. 174, Central Avenue, Calcutta.
6-1-30	N	Jain, NIRMAL KUMAR. Devashrama, Arrah.
6-8-28	N	Jaitly, P. L., Electrical Engineer, Merchant. 15, Canning Road, Allahabad.
2-12-40	R	Jalan, MOHANLAL, Landlord, 61, Harrison Road Calcutta.
1-11-26	N	Jameson, THOMAS BLANDFORD, MAJOR, M.O., M.A. (CANTAB.), I.C.S., District and Sessions Judge. Dinajpur.
1-11-38	R	Jatia, KANAI LALL. 21, Roopchand Roy Street, Calcutta.
4-2-29	R	Jenkins, WALTER ALLEN, D.SC. (SHEFFIELD), L.E.S. United Service Club, Calcutta.
1-11-11	L	Kamaluddin, AHMAD, SHAMS'UL-'ULAMA, M.A., I.E.S., 3, Nawab Abdur Rahman Street, Calcutta.
4-5-10	L	*Kemp, STANLEY W., B.A., D.SC., F.R.S., F.A.S.B. Marine Biological Association of U.K. The Laboratory, Citadel Hill, Plymouth, England.
6-3-01	N	*Khan, THE HON'BLE NAWAB SADR YAR JUNG, MOHD. HABIB-UL-RAHMAN, F.R.A.S.B., Rais, Bhikanpur. Habibganj, District Aligarh.
3-12-24	R	Khan, REZAUR RAHMAN, M.A., B.L., Deputy President, Bengal Legislative Council. 46, Old Ballygunge 1st Lane, Calcutta.
2-8-26	R	Khettry, BENIMADHO, Proprietor, Messrs. Gouri Shanker Khettry, Landholders, Bankers and Merchants. 15, Paggiyapatti, Barabazar, Calcutta.
2-11-25	F	Kimura, R. (KO-SHI), Principal, College Department of Rishso University. Osaki Machi, Tokyo, Japan.
5-2-34	N	Kirby, WALTER, B.SC., Inspector of Mines in India. Dhanbad, E.I.R.
4-11-35	R	Klebe, ANINA, née BRANDT, PH.D. (GREIFSWALD, GERMANY), Psychologist. 26, Royal Court, 5/1, Russell Street, Calcutta.

Date of Election.		
1-3-26	R	Kramrisch, STELLA (MRS.), PH.D., Lecturer in Ancient Indian History (Fine Arts), Calcutta University. 7, Raja Santosh Road, Alipur, Calcutta.
7-3-23	A	Labey, GEORGE THOMAS, M.C., Bengal Pilot Service. United Service Club, Calcutta.
4-2-35	R	Lal, RAM BIHARI, M.B.B.S., D.P.H., D.T.M. & H., D.B., F.N.I., Professor of Vital Statistics and Epidemiology, All-India Institute of Hygiene and Public Health. 21, Chittaranjan Avenue, Calcutta.
5-2-40	R	Law, ANANTA CHURN, Attorney-at Law, 23, Badur Bagan Road, Calcutta.
5-2-34	R	Law, BHABANI CHURN, Merchant, Zemindar and Artist. 223, Cornwallis Street, Calcutta.
5-8-14	L	*Law, BIMALA CHARAN, M.A., B.L., PH.D., F.B.HIST.S., F.R.A.S.B. 43, Kailas Bose Street, Calcutta.
1-2-11	R	*Law, NARENDRA NATH, M.A., B.L., PH.D., F.R.A.S.B. 96, Amherst Street, Calcutta.
4-2-35	R	Law, PARBUTTY CHURN. 223, Cornwallis Street, Calcutta.
1-7-14	R	Law, SATYA CHURN, M.A., B.L., PH.D., F.N.I., F.Z.S., M.B.O.U. 50, Kailas Bose Street, Calcutta.
7-6-26	R	Lemmon, RICHARD DENNIS, Merchant. c/o Messrs. Martin & Harris, Ltd., 17, Prinsep Street, Calcutta.
1-6-31	L	Lort-Williams, THE HON'BLE MR. JUSTICE JOHN, KT., K.C., Barrister-at-Law, Judge, High Court. 227/1, Lower Circular Road, Calcutta.
2-8-05	L	*McCay, DAVID, LT.-COL., I.M.S., M.D., B.CH., B.A.O., M.R.C.P., F.R.A.S.B. c/o The Standard Bank of S. Africa, Hanover, Cape Province, S. Africa.
11-1-93	L	*MacLagan, SIR EDWARD DOUGLAS, K.C.S.I., K.C.I.E., F.R.A.S.B. 39, Egerton Terrace, London, S.W. 3.
3-3-20	R	Mahalanobis, P. C., M.A., B.SC., F.N.I., I.E.S., Professor, Presidency College. 210, Cornwallis Street, Calcutta.
2-5-38	R	Mahtab, MAHARAJ KUMAR A. C., Bijay Manzil, 2, Judge's Court Road, Alipur, Calcutta.
1-3-11	R	Mahtab, SIR BIJAY CHAND, K.C.S.I., I.O.M., MAHARAJA-DHIRAJA BAHADUR OF BURDWAN. 2, Judge's Court Road, Alipur, Calcutta.
3-2-30	N	Mahtab, UDAY CHAND, B.A., Maharaj Kumar of Burdwan. The Palace, Burdwan.
6-2-24	R	Mahindra, K. C., B.A. (CANTAB.). Messrs. Martin & Co., 12, Mission Row, Calcutta.
3-7-39	R	Majumdar, JATINDRA MOHAN, M.A., Deputy Dock Superintendent, Calcutta Port Commissioners. 29, School Row, Bhawanipore, Calcutta.
2-2-16	R	Majumdar, NARENDRA KUMAR, M.A., Professor, Calcutta University. 3, Government Place, West, Calcutta.
4-6-13	N	*Majumdar, RAMESH CHANDRA, M.A., PH.D., F.R.A.S.B., Vice-Chancellor, Dacca University. Ramna, Dacca.
4-11-29	R	Mallya, BANTWAL GANAPATHY, LT.-COL., I.M.S., F.R.C.S.E., Superintendent, Campbell Medical School. Calcutta.
7-9-36	N	Mandhata, H. C., M.A. (ALLAHABAD), Member, Pelman Institute, formerly History Lecturer, Agra College. Ghaziabad, Meerut.
6-2-18	L	*Manen, JOHAN VAN, C.I.E., Officer de l'Instruction Publique, F.R.A.S.B. 6, Temple Chambers, 6, Old Post Office Street, Calcutta.

Date of Election.		
5-6-01	F	Mann, HAROLD HART, D.SC., M.SC., F.I.C., F.L.S. Woburn Experimental Station, Aspley Guise, Bedfordshire, England.
6-1-30	N	Martin, M. F. C., CAPT., R.E. c/o The Garrison Engineer, Loralai, Baluchistan.
4-3-40	R	Mazumdar, DWIJENDRA LAL, Indian Civil Service, 11A, Mayfair, Ballygunge, Calcutta.
2-1-28	N	Mello, FROILANO DE, COLONEL, Director-General of Medical Services in Portuguese India, Professor of Parasitology. Nova Gôa.
6-3-39	R	Meyer, MISS SALLY, M.A., Professor of Botany, Victoria Institution. 11, Sudder Street, Calcutta.
5-11-84	L	*Middlemiss, CHARLES STEWART, O.I.E., F.R.S., B.A., F.G.S., F.R.A.S.B. Aviemore, Crowborough, Sussex, England.
1-2-26	N	*Mills, JAMES PHILIP, I.C.S., M.A. (OXON), J.P., F.N.I., F.R.A.S.B. Shillong, Assam.
5-3-24	N	Mitter, THE HON'BLE SIR B. L., K.C.S.I., M.A., B.L., Barrister-at-Law, Advocate-General, Federal Court. New Delhi.
5-4-26	R	Mitter, KHAGENDRA NATH, RAI BAHADUR, M.A., Professor, Presidency Collège (Retired). 6, Ballygunge Place, Calcutta.
30-9-35	R	Mitter, SUDHIR CHUNDER, Barrister-at-Law. 19, Camac Street, Calcutta.
7-12-36	R	Mittra, S. C. 34, Shampukur Street, Calcutta.
1-11-26	R	Modi, JAL R. K., B.A. 4, Camac Street, Calcutta.
5-3-34	R	Modi, JEHANGIR JEEVANJI JAMSHEDJI, Merchant. 5, Dhurrumtollah Street, Calcutta.
5-11-24	R	Mookerjee, B. N., B.A. (CANTAB.), Engineer. 12, Mission Row, Calcutta.
2-7-24	R	Mookerjee, SYAMAPRASAD, M.A., B.L., D.LITT., Barrister-at-Law. 77, Asutosh Mookerjee Road, Calcutta.
5-4-37	N	Mooney, H. F., I.F.S., Forest Adviser. Sambalpur, B.N. Ry., Orissa.
5-7-37	N	Mozumdar, SUPRABHAT, Master, Rajkumar College. Staff Club, Raipur, C.P.
4-12-39	R	Mukerjea, JYOTISH CHANDRA, Chief Executive Officer, Calcutta Corporation, 28, Camac Street, Calcutta.
6-3-39	R	Mukerjee, S. C., Retired Member of the Indian Civil Service, 25/1, Rowland Road, Calcutta.
2-2-21	N	Mukerjee, SUBODH CHANDRA, SHASTRI, M.A., DOCTEUR-ES-LETTRES (PARIS), Secretary, Mayurbhanj State. Baripada.
6-2-28	R	Mukerji, SIR MANMATHA NATH, KT., M.A., B.L., Late Judge, High Court. 8/1, Harsi Street, Calcutta.
5-7-37	R	Mukerji, PANNALAL, RAI BAHADUR, Zemindar and Honorary Magistrate. 7, Rajmohan Road, Uttarpara, Hooghly.
5-12-27	R	Mukherjee, SUSIL KUMAR, F.R.C.S. (EDIN.), D.O. (OXON), D.O.M.S. (LOND.), Ophthalmic Surgeon, Carmichael Medical College Hospitals. 1/1, Wood Street, Calcutta.
7-11-27	N	Mukherjee, DEVAPROSANNA, M.A., B.L., Zemindar. Burdwan.
2-8-26	R	*Mukherjee, JNANENDRA NATH, D.SC. (LONDON), F.C.S. (LONDON), F.N.I., F.R.A.S.B., Ghose Professor of Chemistry, University of Calcutta. 92, Upper Circular Road, Calcutta.

Date of Election.		
5-7-26	R	Mukhopadhyaya, PRABHAT KUMAR, M.A., <i>Research Assistant, Calcutta University. 6, Hindustan Park, Ballygunge, Calcutta.</i>
2-2-21	R	Mukhopadhyaya, RAMAPRASAD, M.A., B.L. 77, <i>Ashutosh Mookerjee Road, Bhawanipore, Calcutta.</i>
2-4-28	R	Mullick, KARTICK CHURN, KUMAR, Director, Raja D. N. Mullick & Sons, Ltd. <i>Colootola Rajbati, Chittaranjan Avenue, Calcutta.</i>
6-8-34	R	Mullick, MANICK LALL, Landholder ; Honorary Magistrate, Sealdah. <i>123, Grey Street, Calcutta.</i>
4-3-29	R	Mullick, PRAMATHA NATH, RAI BAHADUR, Zemindar and Landholder. <i>129, Cornwallis Street, Calcutta.</i>
7-5-28	N	Murray, EUGENE FLORIAN OLIPHANT, A.I.M.M., F.G.S., <i>Mining Geologist and Engineer. Tatanagar, B.N. Ry.</i>
5-6-39	R	Nag, KALIDAS, M.A. (CAL.), D.LITT. (PARIS), <i>Lecturer, Calcutta University. 283, Park Circus, Calcutta.</i>
5-12-27	L	Namgyal, H.H. MAHARAJA SIR TASHI, K.C.I.E., <i>Maharaja of Sikkim. Gangtok, Sikkim.</i>
6-6-27	N	Nandi, MAHARAJA SRIS CHANDRA, M.A., M.L.C., <i>Zemindar. Kasimbazar Rajbari, Kasimbazar, Murshidabad.</i>
4-2-29	N	Narain, HIRDE, M.A., B.T., <i>Professor of History, Morris College. Nagpur, C.P.</i>
5-2-34	N	Nariman, RUSTOM, K., M.I.C.E., A.C.H., F.R.G.S. (Retired <i>Superintending Engineer Punjab Irrigation), Professor of Engineering, Osmania University. c/o The Union Bank of India. Fort. Bombay.</i>
5-3-28	R	Neogi, PANCHANAN, M.A., PH.D., F.N.I., I.E.S., <i>Professor of Chemistry, Presidency College. 44A, New Shambazar Street, Calcutta.</i>
3-11-30	N	Newman, CARL DAMIEN, M.B.B.S., D.T.M. & H., <i>District Medical Officer, E.B. Ry. Lalmonirhat, E.B. Ry.</i>
3-12-24	A	Newman, CHAS. F., F.R.G.S., M.R.S.T., M.O.P. <i>Ramnagar, Benares.</i>
7-4-15	L	Ohtani, COUNT KOZUJ. San-ya-so, Edomachi, Fushimi, <i>Kyoto, Japan.</i>
1-5-39	R	Parker, E., CAPT., I.A. (RETD.). <i>c/o Remington Rand Inc., 3, Council House Street, Calcutta.</i>
5-2-34	R	Pasricha, CHIRANJI LAL, M.A., M.B., B.CHIR. (CANTAB.), <i>M.R.C.S. (ENG.), L.R.C.P. (LOND.), MAJOR, I.M.S., Professor of Pathology, Bacteriology and Helminthology, School of Tropical Medicine and Hygiene. Chittaranjan Avenue, Calcutta.</i>
6-6-88	L	Pannell, AUBRAY PERCIVAL, B.A., <i>Barrister-at-Law. Lamb's Building, Temple, London, E.C. 4.</i>
5-2-40	R	Pask, JOHN DAVID, B.SC., PH.D. (LEEDS), <i>Chief Chemist, Howrah Mills Co., Ltd., Ramkrishnapur, Howrah.</i>
5-2-34	N	Percival, FREDERICK GEORGE, PH.D. (LOND.), F.G.S., <i>General Superintendent, Ore Mines and Quarries, Tata Iron and Steel Co. Jamshedpur.</i>
1-4-25	R	Perier, FERDINAND, S.J., <i>Most Reverend the Archbishop of Calcutta. 32, Park Street, Calcutta.</i>
3-6-40	F	Poleman, HORACE IRVIN, B.A., M.A., PH.D., <i>Director of Indic Studies, Library of Congress. Washington, D.C., U.S.A.</i>

Date of Election.		
3-4-18	L	*Prashad, BAINI, D.SC., F.Z.S., F.R.S.E., F.N.I., F.R.A.S.B., Director, Zoological Survey of India. Indian Museum, Calcutta.
3-8-25	N	*Pruthi, HEM SINGH, M.SC. (PUNJAB), PH.D. (LONDON), F.N.I., F.R.A.S.B., Imperial Entomologist, Imperial Institute of Agricultural Research. Pusa, Darbhanga.
3-12-24	R	Pushong, E. S., M.D., L.S.A., Medical Practitioner. 1, Chapel Road, Hastings, Calcutta.
4-12-39	R	Radhakrishnan, SIR SARVAPALLI, KT., M.A., F.B.A., D.LIT. George V Professor of Philosophy, Calcutta University P. 378, Southern Avenue, P.O. Kalighat, Calcutta.
3-11-30	R	Rahman, SHAH KALIMUR, M.A., Lecturer in Arabic and Persian, Calcutta University. Carmichael Hostel, 51, Baitakkhana Road, Calcutta.
7-9-36	N	Ram, DOULAT, Accountant, Military Secretary's Office. c/o Messrs. Biru Mal Chiranji Lal, Chhatla Magni Ram, Patiala.
2-1-39	R	Ramachandran, T. N., M.A., Offg. Superintendent, Archaeological Section, Indian Museum. 27, Chowringhee, Calcutta.
2-10-39	N	Rangarajam, KRISHNASWAMI, Employee, I.C.I. (India) Ltd., Madras. Rukmani Building, Mambalam West, Madras.
6-8-34	R	Rao, U. SHANKER, Bengal Pilot Service. 83, Chowringhee, Calcutta.
1-2-26	N	Rao, Y. RAMACHANDRA, RAO SAHIB, M.A., F.E.S., Locust Research Entomologist. 5, Scindia House, New Delhi.
2-7-24	N	Ray, ABINASH CHANDRA, B.A. R.M.H.E. School, P.O. Baidyabati.
7-9-21	R	Ray, HEM CHANDRA, M.A., PH.D. (LONDON), D.LIT. (LONDON). 135B, Vivekananda Road, Calcutta.
5-1-21	N	Ray, JAGADISNATH, MAHARAJA, Maharaja of Dinajpore. Dinajpore.
5-3-90	R	*Ray, SIR PROFULLA CHANDRA, KT., C.I.E., D.SC., F.N.I., F.R.A.S.B. University College of Science, 92, Upper Circular Road, Calcutta.
4-12-39	R	Ray-Chowdhury, H. C., Carmichael Professor of Ancient Indian History and Culture, Calcutta University. 6, Mysore Road, Kalighat, Calcutta.
5-11-28	L	Reinhart, WERNER, Merchant. c/o Messrs. Volkart Bros., Rychenberg, Winterthur, Switzerland.
2-4-24	F	Richards, F. J., I.C.S. 1-A, Collingham Road, London, S.W. 5.
5-2-34	R	Richter, HERBERT, DR. JUR., Vice-Consul for Germany. 26, Lee Road, Calcutta.
3-12-24	L	Roerich, GEORGE NICHOLAS, M.A., M.B.A.S., Orientalist. 310, Riverside Drive, New York, U.S.A. ('Urusvati' Naggar, Kulu, Punjab).
2-7-28	L	Roerich, NICHOLAS, Professor, Honorary President, Master Institute of United Arts, New York, U.S.A., Artist-Painter. 310, Riverside Drive, New York, U.S.A.
5-6-33	R	Rossetti, FELIX FRANCIS LEO, B.SC., B.H., Secretary, Y.M.C.A. 42, Corporation Street, Calcutta.
6-12-26	R	ROY, SIR A. K., KT., Barrister-at-Law, Advocate-General, Bengal. 3, Upper Wood Street, P.O. Theatre Road, Calcutta.

Date of Election		
5-2-40	R	Roy, B. C., B.A., M.D., F.R.C.S. (ENG.), M.B.C.P. (LOND.), F.S.M.F. (BENGAL). 36, Wellington Street, Calcutta.
5-4-37	N	Roy, DAVID, <i>Assam Civil Service.</i> Shillong, Assam.
1-12-30	N	Roy, KUMAR KAMALARANJAN, B.A., <i>Zemindar.</i> Kasimbazar Post, Dt. Murshidabad.
6-8-24	N	Roy-Chowdhury, BRAJENDRA KISHORE, <i>Zemindar.</i> (53, Sukea Street, Calcutta.) Gauripur, Mymensingh.
7-5-28	R	*Saha, MEGHNAD, D.SC., F.R.S., F.N.I., F.R.A.S.B., <i>Polit. Professor of Physics, Calcutta University.</i> 92, Upper Circular Road, Calcutta.
5-4-37	R	Sahni, M. R., M.A. (CANTAB.), D.SC. (LOND.), D.L.C., <i>Geologist, Geological Survey of India.</i> 27, Chowringhee, Calcutta.
5-2-34	L	Sale, HAROLD MONTAGUE, M.A., F.G.S., Mancetter College, Athershorne, Warwickshire, England.
3-12-24	R	Sarkar, C. K., C.E., <i>Engineer and Architect.</i> 10, Hastings Street, Calcutta.
4-2-35	R	Sarkar, THE HON'BLE MR. NALINI RANJAN. Hindusthan Buildings, Corporation Street, Calcutta.
5-4-37	R	Sattar, THE HON'BLE MR. A. R. H. A., <i>Member, Council of State.</i> 32, Ezra Street, Calcutta.
3-6-40	N	Seal, JOHN ROBERT, M.B.E., c/o. Grand Hotel, Simla, H.O.
6-3-33	R	Seal, SATIS CHANDRA, M.A., B.L., <i>Honorary Secretary, Indian Research Institute.</i> 170, Maniktola Street, Calcutta.
1-4-25	R	Sen, BENOY CHANDRA, M.A. 'Rupeswar', Diamond Harbour Road, Behala.
9-12-36	R	Sen, D. N. 7, Rawdon Street, Calcutta.
1-6-36	N	Sen, J. M., M.ED. (LEEDS), B.SC. (CAL.), T.D. (LOND.), DIP.ED. (OXFORD), F.R.G.S., F.N.I. <i>Principal, Krishnagar College.</i> Krishnagar, Nadia.
5-12-23	L	Sen, LAKSHMAN, H.H. RAJA OF SUKET. Suket State, Punjab.
5-4-37	N	Sen, KSHITISH MOHAN. <i>Principal, Visvabharati, Santiniketan,</i> Dist. Birbhum.
5-2-40	N	Sen, S. C., B.SC. (CAL.), B.A. (CANTAB.), A.M.I.CHEM.E. (LONDON.), <i>Supdt., Cinchona Cultivation in Bengal.</i> Mungpoo, Riyand, D.H.Ry.
1-4-29	R	Sen-Gupta, NARES CHANDRA, M.A., D.L., <i>Advocate, High Court.</i> 23A, Manoharpukur Road, Calcutta.
5-7-11	L	*Sewell, ROBERT BERESFORD SEYMOUR, C.I.E., M.A., SC.D. (CANTAB.), M.R.C.S., L.R.C.P., F.Z.S., F.L.S., F.R.S., F.N.I., F.R.A.S.B., LT.-COL., I.M.S., <i>Late Director, Zoological Survey of India.</i> 18, Barrow Road, Cambridge, England.
5-4-37	N	Sharaf-ud-Din, S., M.A., B.L., <i>Professor, Chittagong College.</i> Chittagong.
2-11-25	N	Sharif, MOHAMMAD, D.SC., F.R.M.S., F.L.S., <i>Lecturer in Zoology.</i> Muslim University, Aligarh.
6-5-29	N	Sharma, SRI RAM, M.A., M.B.A.S., M.A.O.S., <i>Professor of History.</i> D.A.V. College, Lahore.
5-8-35	N	Shattock, JOHN SWITHIN HARVEY, B.A. (OXON), I.C.S. Political Department, New Delhi.
2-5-23	F	Shebbeare, E. O., <i>Chief Game Warden.</i> Post Box No. 376, Kuala Lumpur, F.M.S.
6-1-09	N	Shirreff, ALEXANDER GRIERSON, B.A., I.C.S., <i>Commissioner.</i> Gorakhpur, U.P.

Date of Election.		
4-1-26	N	Shortt, H. E., F.N.I., LT.-COL., I.M.S., Director, King's Institute, Guindy. Madras.
6-2-28	L	Shumser, JUNG BAHADUR RANA, SIR KAISER, K.B.E., SURPRADIPTA MANYAVARA, LIEUT.-GENERAL, Nepalese Army. Kaiser Mahal, Kathmandu, Nepal.
4-11-29	R	Siddiqi, MOHAMMAD ZUBAYR, M.A., PH.D., Sir Asutosh Professor of Islamic Culture, Calcutta University. 6, Suhrawardy Avenue, Calcutta.
6-2-39	N	Simeons, ALBERT THEODORE WILLIAM, M.D. (HEIDELBERG), Physician, Khatau Mansion, Cooperage, Bombay.
5-3-13	L	*Simonsen, JOHN LIONEL, D.SC., F.I.C., F.R.S., F.R.A.S.B. University College of North Wales, Bangor, North Wales.
6-3-39	F	Sinclair, GREGG M., Director, Oriental Institute, University of Hawaii. Honolulu, Hawaii, U.S.A.
6-2-18	N	Singh, MANYABARA BADAHAJI MARICHI MAN, PANDITJI, C.I.E. 38, Khichapokhari, Kathmandu, Nepal.
4-11-29	A	Singh, JAIPAL, M.A. (Modern Greats), St. John's College, Oxford University. Achimota College, Accra, West Africa.
5-3-34	L	Singh, HIS HIGHNESS THE HON'BLE MAHARAJA DHIRAJA SIR KAMESWAR, K.C.I.E. Darbhanga.
2-1-33	N	Singh, RUDRA PERTAB, RAO BAHADUR, Proprietor, Sonbarsa Raj. Sonbarsa P.O., District Bhagalpore.
4-2-35	A	Singh, SARABJIT, M.A., B.L. P.O. Imphal, Manipur State.
5-9-12	R	Singhi, BAHADUR SINGH. (Azimganj, Murshidabad). 48, Gariahat Road, Calcutta.
7-8-33	N	Sinh, RAGHUBIR, RAJKUMAR, M.A., LL.B., Heir-Apparent of Sitamau State. Raghubir Niwas, Sitamau, C.I.
1-8-38	R	Sinha, B. 4, Hastings Park Street, Calcutta.
6-6-27	N	Sinha, SHEONANDAN PRASAD, M.D., Assistant Surgeon. Government Hospital, Jamshedpur.
4-1-26	N	Sinton, J. A., O.B.E., LT.-COL., I.M.S., V.C., Officer-in-Charge, Malaria Bureau. Central Research Institute, Kasauli.
5-7-16	L	Sircar, GANAPATI, VIDYARATNA. 69, Beliaghata Main Road, Calcutta.
5-3-24	R	Sircar, SIR NIL RATAN, KT., M.A., M.D., Physician. 7, Short Street, Calcutta.
5-8-29	R	Sommerfeld, ALFRED, Merchant. c/o Mousell & Co., Mercantile Buildings, Lall Bazar, Calcutta.
3-9-34	R	Sondhi, VED PALL, M.SC., F.G.S., Assistant Superintendent, Geological Survey of India. 27, Chowringhee, Calcutta.
7-3-23	F	Stamp, L. DUDLEY, B.A., D.SC. University of London, London School of Economics, Houghton Street, London, W.C. 2.
28-9-04	L	*Stapleton, HENRY ERNEST, M.A., B.SC., D.LITT., F.R.A.S.B., Late Director of Public Instruction, Bengal. St. Brelade, Jersey, C.I., England.
5-4-37	R	Sufi, M. F., B.A., D.P.H., L.R.C.P.E., L.R.C.S.E., L.F.P.S.G., Assistant Director of Public Health, Bengal (ret'd.). 8/A/1, Elliott Lane, Calcutta.
2-6-20	R	Suhrawardy, SIR HASSAN, O.B.E., LT.-COL., KT., M.D., F.R.C.S.I., D.P.H., Chief Medical Officer, E.B. Ry., Late Vice-Chancellor, Calcutta University. 3, Suhrawardy Avenue, Park Circus, Calcutta.
3-3-20	N	Sundararaj, BUNGURU, M.A., F.N.I., PH.D., Director of Fisheries. Chepauk, Madras.

Date of Election.		
7-11-32	L	Suvarna, SHUMSER JUNG BAHADUR RANA , <i>Major-General in the Nepalese Army</i> . Singha Darbar, Kathmandu, Nepal.
6-4-98	R	Tagore, SIR PRADYOT COOMAR, KT., MAHARAJA BAHADUR . 'Tagore Castle', 12, Prasanna Coomar Tagore Street, Calcutta.
7-11-27	R	Tarkatirtha, BIMALANANDA, Kaviraj, Punditbhusan, Byakaranatirtha . 90/3, Grey Street, Calcutta.
31-8-93	L	Tate, GEORGE PASSMAN . 56, Cantonment, Bareilly, U.P.
1-6-04	L	*Tipper, GEORGE HOWLETT, M.A., F.G.S., M.INST.M.M., F.R.A.S.B. 'The Laurels', Glebe Road, Cambridge, England.
6-6-38	N	Tressler, G. W., M.A., Senior Professor of History and Political Science, Murray College . Sialkot, Punjab.
7-5-28	F	Tucci, GUISEPPE, PH.D., Late Professor of Religions and Philosophy of India and the Far East, University of Rome; Professor of Chinese, University of Naples . Naples, Italy.
5-7-26	A	Tyson, JOHN DAWSON, C.B.E., M.A. (OXON), I.C.S., J.P. c/o U.S. Club, Calcutta.
4-1-37	R	Vedantatirtha, NARENDRA CHANDRA, M.A. (BAGCHI, BHATTACHARJA, SANKHYATIRTHA, MIMAMSATIRTHA, TATTVARATNA, SASTRI), Author and Editor of Books . 49, Cornwallis Street, Calcutta.
7-8-33	R	Vedantatirtha, VANAMALI, M.A., Formerly Professor, Cotton College, Gauhati . 8/4-E, Nepal Bhattacharya Lane, Kalighat, Calcutta.
6-3-01	L	*Vogel, JEAN PHILIPPE, LITT.D., F.R.A.S.B. Noordeindeplein. 4a, Lieden, Holland.
27-9-94	L	Vost, WILLIAM, LT.-COL., I.M.S. 'Woodhurst', Manor Way, South Croydon, Surrey, England.
6-5-25	N	*Wadia, D. N., M.A., B.SC., F.R.G.S., F.N.I., F.R.A.S.B., Government Mineralogist . Torrington Square, Colombo, Ceylon.
5-3-28	N	Waight, HARRY GEORGE, B.A. (OXON and LOND.), F.R.G.S., I.C.S., District and Sessions Judge . Burdwan.
6-2-33	N	Wellsted, THOMAS ARTHUR, A.R.S.M., B.SC., ASSOC. INST. M.M., Mining Engineer . Mansar, P.O. Kandri, Ramtek, C.P.
6-2-33	R	West, WILLIAM DIXON, M.A. (CANTAB.), F.N.I., Assistant Superintendent, Geological Survey of India . 27, Chowringhee, Calcutta.
1-11-26	R	Westcott, FOSS, MOST REVEREND, D.D. (CANTAB.), HONORARY D.D. (OXON), Lord Bishop of Calcutta and Metropolitan of India, Burma and Ceylon . Bishop's House, 51, Chowringhee, Calcutta.
19-9-06	L	*Whitehead, RICHARD BERTRAM, F.R.A.S.B., I.C.S. (RETD.) . 30, Millington Road, Cambridge, England.
6-5-29	A	Williams, HENRY FRENCH FULFORD, M.A., CLARE COLLEGE (CAMP.), Chaplain of Barrackpore . Barrackpore.
7-9-36	R	Williams, N. T., Orr Dignam & Co. 32, Dalhousie Sqr., Calcutta.
6-2-28	F	Williams, T. TALIESIN, M.A., B.SC. Penrallt Fach, Newport, Pembrokeshire.
1-4-08	R	Wordsworth, WILLIAM CHRISTOPHER, M.A., I.E.S. (RETD.) c/o The 'Statesman', Chowringhee Square, Calcutta.

Date of Election.		
5-2-19	N	*Yazdani, GHULAM, M.A., F.R.A.S.B., <i>Epigraphist to the Government of India for Persian and Arabic Inscriptions, Hyderabad.</i> Archæological Survey, Hyderabad, Deccan.
2-10-39	N	Zafar Hasan, MAULVI, KHAN BAHADUR, <i>Superintendent, Archæological Survey.</i> Northern Circle, Agra.

ORDINARY MEMBERS.

(Chronological.)

1884.				1907.			
Nov.	5.	Middlemiss, C. S.		July	3.	Brown, J. C.	
1888.				"	"	Christie, W. A. K.	
June	6.	Pennell, A. P.		1908.			
1890.				Jan.	1.	Brahmachari, Sir U. N.	
Mar.	5.	Ray, Sir Prafulla C.		April	1.	Wordsworth, W. C.	
<hr/>				1909.			
1892.				Jan.	6.	Shirreff, A. G.	25
Jan.	11.	MacLagan, Sir Edward D.		April	7.	Bentley, C. A.	
1893.				July	7.	Bazaz, R. K.	
5 Aug.	31.	Tate, G. Passman		Oct.	6.	Brown, P.	
1894.				"	"	Gangoli, O. C.	
Sept.	27.	Vost, W.		1910.			
1895.				May	4.	Dhavle, S. B.	30
Sept.	19.	De, K. C.		"	"	Kemp, S. W.	
1896.				Sept.	7.	Gravely, F. H.	
Jan.	8.	Burn, Sir Richard		<hr/>			
1898.				1911.			
10 Jan.	5.	Dods, W. K.		Feb.	1.	Insch, J.	
April	6.	Tagore, Sir Pradyot C.		"	"	Law, N. N.	
<hr/>				Mar.	1.	Mahtab, Sir Bijay Chand	35
1901.				June	7.	Chatterjee, K. K.	
Mar.	6.	Shirwani, H.		"	"	Hossain, M. H.	
"	"	Vogel, J. P.		July	5.	Sewell, R. B. S.	
June	5.	Mann, H. H.		Nov.	1.	Ahmed, K.	
1902.				<hr/>			
July	2.	Doxey, F.		1912.			
1904.				May	1.	Harley, A. H.	40
15 June	1.	Tipper, G. H.		July	3.	Andrews, E. A.	
Aug.	3.	Fermor, Sir L. L.		Sept.	4.	Ghosh, T.	
"	"	Stapleton, H. E.		"	"	Singhi, B. S.	
1905.				<hr/>			
Aug.	2.	McCay, D.		1913.			
1906.				Mar.	5.	Simonsen, J. L.	45
Jan.	3.	Chapman, J. A.		April	2.	Calder, C. C.	
20 Sept.	19.	Whitehead, R. B.		June	4.	Majumdar, R. C.	
<hr/>				Nov.	5.	Fox, C. S.	
<hr/>				1914.			
<hr/>				Mar.	4.	Bacot, J.	
<hr/>				July	1.	Law, S. C.	
<hr/>				Aug.	5.	Law, B. C.	50

1915.

April	7.	Ohtani, Count K.
Aug.	4.	Gurner, C. W.
Oct.	27.	Chatterjee, Sir A. C.

1916.

Feb.	2.	Majumdar, N. K.
55 July	5.	Sarkar, G.

1917.

April	4.	Awati, P. R.
"	"	Aiyangar, K. V. R.
Aug.	1.	Bhandarkar, D. R.

1918.

Feb.	6.	Banerji, N. N.
60 "	"	Manen, Johan van
"	"	Singh, B. M.
April	3.	Prashad, B.

1919.

Feb.	5.	Yazdani, G.
Mar.	5.	Gupta, S. P.

1920.

65 Mar.	3.	Mahalanobis, P. C.
"	"	Sundara Raj, B.
June	2.	Suhrawardy, Sir H.
Aug.	4.	Dikshit, K. N.
70 Sept.	1.	Chakladar, H. C.
"	"	Chanda, R. P.
"	"	Chatterjee, N. C.
Dec.	"	Akbar Khan, Sir M.

1921.

Jan.	5.	Ray, J. N.
Feb.	2.	Jain, Chhote Lall
75 "	"	Mukherjee, R. P.
"	"	Mookherjee, S. C.
Mar.	2.	Agharkar, S. P.
Sept.	7.	Ray, H. C.
Nov.	2.	Hora, S. L.

1922.

80 Feb.	1.	Chopra, R. N.
April	5.	Abdul Ali, A. F. M.

1923.

Mar.	7.	Labey, G. T.
"	"	Stamp, L. D.

May 2. Shebbeare, E. O.

June 6. Howard, Sir A. 85

" " Hutton, J. H.

Aug. 1. Biswas, K. P.

Dec. 5. Chopra, B. N.

" " Barwell, N. F.

" " Sen, H. H. Lakshman 90

1924.

Feb. 6. Mahindra, K. C.

Mar. 5. Banerjee, P. N.

" " Mitter, Sir B. L.

" " Sircar, Sir N. R.

April 2. Bahl, K. N. 95

" " Ghose, K.

" " Richards, F. J.

" " Haq, M. M.

May 7. Bhattacharya, B.

July 2. Ray, A. C. 100

" " Mookerjee, S. P.

Aug. 6. Chatterji, S. K.

" " Roy Chowdhury, B. K.

" " Davies, L. M.

Nov. 5. Chattopadhyay, K. P. 105

" " Mookerji, B. N.

Dec. 3. Newman, Chas. F.

" " Pushong, E. S.

" " Basu, J. N.

" " Ghose, S. C. 110

" " Roerich, G. N.

" " Khan, R. R.

" " Sarkar, C. K.

1925.

Feb. 4. Guha, B. S.

Mar. 4. Benthall, Sir E. C. 115

" " Das, A. N.

" " Deb, K.

April 1. Perier, F.

" " Hobbs, H.

" " Sen, B. C. 120

May 6. Wadia, D. N.

July 6. Bose, M. M.

Aug. 3. Pruthi, H. S.

Nov. 2. Acharya, P.

" " Chattopādhyāya, K. C. 125

" " Crookshank, H.

" " Kimura, R.

" " Sharif, M.

1926.

Jan. 4. Shortt, H. E.

" " Sinton, J. A. 130

	Feb.	1.	Rao, Y. R.	
	"	"	Ghuznavi, Sir A. H.	
	"	"	Harris, H. G.	
135	Mar.	1.	Datta, H. N.	
	"	"	Basu, N. K.	
	"	"	Kramrisch, Stella	
	"	"	Bagnall, J. F.	
	April	5.	Ghose, B. C.	
	"	"	Bhatia, M. L.	
140	"	"	Mitter, K. N.	
	June	6.	Lemmon, R. D.	
	July	5.	Mukhopadhyaya, P. K.	
	"	"	Tyson, J. D.	
	Aug.	2.	Mukherjee, J. N.	
145	"	"	Khettry, B.	
	Nov.	1.	Jameson, T. B.	
	"	"	Modi, J. R. K.	
	"	"	Westcott, F.	
	"	"	Mills, J. P.	
150	"	"	Galstaun, S.	
	"	"	Bagchi, P. C.	
	Dec.	6.	Aiyangar, S. K.	
	"	"	Roy, A. K.	

1927.

	Jan.	3.	Chakravarty, N.	
155	"	"	Bivar, H. G. S.	
	Feb.	7.	Chatterjee, A.	
	Mar.	7.	Hopkinson, A. J.	
	"	"	Ghosh, P. N.	
	"	"	Abdul Kadir, A. M. F.	
160	June	6.	Nandi, Maharaja S. C.	
	"	"	Jain, B.	
	"	"	Sinha, S. P.	
	July	4.	Chatterjee, P. P.	
	"	"	Chakravarti, C.	
165	Nov.	7.	Tarkatirtha, B.	
	"	"	Mukherji, D.	
	"	"	Brahmachary, S. C.	
	Dec.	5.	Namgyal, H.H. Sir Tashi	
	"	"	Dechen, H.H.	
	"	"	Kunzang	
170	"	"	Chowdhury, Sir C.	
	"	"	Mukerjee, S. K.	

1928.

	Jan.	2.	Mello, F. de	
	Feb.	6.	Ezra, Sir D.	
	"	"	Mukerji, Sir M. N.	
175	"	"	Williams, T. T.	
	"	"	Shumsher, Sir Kaiser	
	Mar.	5.	Waight, H. G.	
	"	"	Goopu, D. N.	

	Mar.	5.	Neogi, P.	
	"	"	Biswas, C. C.	180
	April	2.	Mullick, K. C.	
	"	"	Chowdhury, Rai J. N.	
	"	"	Harris, L. E.	
	May	7.	Chatterji, K. N.	
	"	"	Chatterjee, Sir N. R.	185
	"	"	Tucci, G.	
	"	"	Murray, E. F. O.	
	"	"	Ghosal, U. N.	
	"	"	Saha, M. N.	
	June	4.	Bhadra, S. N.	190
	"	"	Bhattachali, N. K.	
	July	2.	Roerich, N.	
	Aug.	6.	Jaitley, P. L.	
	"	"	Ghuznavi, I. S. K.	
	"	"	Heron, A. M.	195
	Nov.	5.	Reinhart, W.	
	"	"	Galstaun, J. C.	

1929.

	Jan.	7.	Ghose, M. C.	
	Feb.	4.	Narain, Hirde	
	"	"	Jenkins, W. A.	200
	Mar.	4.	De, J. C.	
	"	"	Mullick, P. N.	
	April	1.	Sen-Gupta, N. C.	
	May	6.	Sharma, S. R.	
	"	"	Williams, H. F. F.	205
	Aug.	5.	Sommerfeld, A.	
	Nov.	4.	Singh, J.	
	"	"	Cotter, G. de P.	
	"	"	Campbell, G. R.	
	"	"	Siddiqi, M. Z.	210
	"	"	Mallya, B. G.	
	Dec.	2.	Fawcus, L. R.	

1930.

	Jan.	6.	Jain, N. K.	
	"	"	Haldar, S. K.	
	"	"	Martin, M. F. C.	215
	Feb.	3.	Mahtab, U. C.	
	"	"	Chakravarti, M. N.	
	Mar.	3.	Ashton, H. S.	
	May	5.	Deo, Sir P. C. Bhanj	
	"	"	Cooper, G. A. P.	220
	Nov.	3.	Austin, G. J.	
	"	"	Rahman, S. K.	
	"	"	Newman, C. D.	
	Dec.	1.	Roy, K. K.	

1931.

	Jan.	5.	Chatterji, D.	225
	"	"	Evans, P.	
	Feb.	2.	Clough, J.	
	Mar.	2.	Bose, S. K.	
	April	6.	Bhose, J. C.	

- 230 May 4. Bottomley, J. M.
June 1. Lort-Williams, J.

1932.

- Mar. 7. Hughes, A.
" " Chakraborty, K. B.
" " Darbari, M. D.
235 Nov. " Suvarna Shumser
" " Driver, D. C.
Dec. 5. Dutt, N.
" " Boyle, C. A.

1933.

- Jan. 2. George, J.
240 " " Dutch, R. A.
" " Singh, R. P.
Feb. 6. Wellsted, T. A.
" " Ghatak, J. C.
" " West, W. D.
245 Mar. 6. Seal, S. C.
June 5. Chakravarti, S. K.
" " Rossetti, F. F. L.
July 3. Dutt, G. S.
Aug. 7. Singh, Raghubir
250 " " Vedantatirtha, V.

1934.

- Jan. 1. Ahmad, M. J.
Feb. 5. Bhuyan, S. K.
" " Haldar, B. V.
" " Kirby, W.
255 " " Law, B. C.
" " Nariman, R. K.
" " Pasricha, C. L.
" " Percival, F. G.
" " Richter, H.
260 " " Sale, H. M.
Mar. 5. Modi, J. J. J.
" " Singh, H.H. Sir K.
May 7. Bent, W. A.
June 4. Chatterji, B. R.
265 Aug. 6. Husain, S. A.
" " Mullick, M. L.
" " Rao, U. S.
Sep. 3. Auden, J. B.
" " Sondhi, V. P.
270 Nov. 5. Gee, E. R.
" " Dey, M.
Dec. 3. Burt, B. C.
" " Brahmachari, P. N.
" " Chatterjee, S. C.

1935.

- 275 Feb. 4. Singh, S.
" " Sarkar, N. R.

- Feb. 4. Law, P. C.
" " Lal, R. B.
Mar. 4. Groth, E. M.
Aug. 5. Shattock, J. S. H. 280
Sep. 30. Dutt, M. N.
" " Mitter, S. K.
Nov. 4. Bor, N. L.
" " Chaudhuri, S. N.
" " Anina Klebe. 285
" " Hirtzel, M. A. F.

1936.

- Jan. 6. Brocke, A. G.
" " Berkely-Hill, O.
Feb. 3. Catto, Lord 290
Mar. 2. Ahmad, A.
" " Chatterji, Mrs. T.
" " Chatterjee, M.
June 1. Sen, J. M.
Sep. 7. Williams, N. T.
" " Ghosh, J. 295
" " Ram, D.
" " Mandhata, H. C.
" " Bagchi, K. N.
Nov. 2. Bothra, S.
Dec. 9. Sen, D. N. 300
" " Mitra, S. C.
" " Gillespie, A. D.
" " Bose, A. N.
" " Basu, I. B.
" " Banerjee, S. M. 305

1937.

- Jan. 4. Vedantatirtha, N. C.
April 5. Sufi, M. E.
" " Sharaf-ud-Din, S.
" " Sattar, A. H.
" " Sahni, M. R. 310
" " Roy, D.
" " Mooney, H. F.
" " Sen, K. M.
July 5. Mozumdar, S.
" " Mukherjee, P. 315
Sep. 6. Halim, A.
" " Durniz-Podewila,
Count
" " Bhattacharya, N. C.

1938.

- Feb. 7. Chakravarti, P. K.
April 4. Chaudhuri, Mrs. R. 320
" " Anderson, J.
May 2. Farouqi, K. G. M.
" " Mahtab, Maharaj
" " Kumar, A. C.
" " Jacob, J. R.

325	June	6.	Tressler, G. W.
"	"	"	Dudhoria, N. K. S.
July	"	4.	Carstairs, A. M.
Aug.	"	1.	Sinha, E.
"	"	"	Banerjee, J. N.
330	Nov.	1.	Jatia, K. L.
"	"	"	Eekhout, Jhr., P. J.
Dec.	"	5.	Das Gupta, C. C.

1939.

	Jan.	2.	Bose, S. M.
"	"	"	Ramachandran, T. N.
335	Feb.	6.	Basu, J. N.
"	"	"	Simeons, A. T. W.
"	"	"	Chakravarti, R. M.
Mar.	"	6.	Culshaw, W. J.
"	"	"	Sinclair, G. M.
340	"	"	Mukerjee, S. C.
"	"	"	Meyer, Miss S.
May	"	1.	Parker, E.
"	"	"	Ayrton, S. M.
June	"	5.	Ali, S. S.
345	"	"	Nag, K.
July	"	3.	Majumdar, J. M.
Aug.	"	7.	Bose, G.
"	"	"	Holland, B. A.
Sep.	"	4.	Ghosh, J. C.
350	Oct.	2.	Hasan, Z.
"	"	"	Basu Mazoomder, W.
"	"	"	Rangarajam, K.
"	"	"	Bastin, R. W.
Dec.	"	4.	Ray Chowdhury, H. C.

Dec.	4.	Cameron, A.	355
"	"	Radhakrishnan, S.	
"	"	Mukerjee, J. C.	
"	"	Bose, D. M.	

1940.

Feb.	2.	Sen, S. C.	
"	"	Roy, B. C.	360
"	"	Peak, J. D.	
"	"	Law, A. C.	
"	"	Huda, S. S.	
"	"	Ghatak, I. B.	
"	"	Fleming, A.	365
"	"	Basu, M. M.	
Mar.	4.	Mazumdar, D. L.	
"	"	Harshe, R. G.	
"	"	Haryana, R. A.	
"	"	Crawford, C. E. J.	370
"	"	Bruce, A. E. R.	
"	"	Bell, F. O.	
"	"	Foster, A. R.	
May.	6.	Griffiths, W. G.	
"	"	Bharucha, F. E.	375
"	"	Asadullah, K. M.	
June	3.	Seal, J. R.	
"	"	Poleman, H. I.	
"	"	De, J. C.	
July	1.	Jagannath.	380
"	"	Dutt, S. C.	
"	"	Chatterjee, A. B.	
Sep.	2.	Ghosh, P. K.	
"	"	Chatterji, B. C.	
Dec.	2.	Edgley, N. G. A.	385
"	"	Isch-Wall, C.	
"	"	Jalan, M.	

LIFE MEMBERS.

(Chronological.)

	5-11-84	C. S. Middlemiss (30 N.).	5-7-16	G. Sircar (29 N.).	30
	6-6-88	A. P. Pennell (88 F.).	6-2-18	Johan van Manen (25 R.).	
	11-1-93	Sir Edward D. MacLagan (94 R.).	3-4-18	B. Prashad (29 R.).	
	31-7-93	G. P. Tate (23 N.).	2-11-21	S. L. Hora (30 N.).	
5	27-9-94	W. Vost (94 F.).	6-6-23	Sir A. Howard (30 N.).	
	19-9-95	K. C. De (26 R.).	1-8-23	Kalipada Biswas (36 R.).	35
	6-2-01	J.Ph. Vogel (25 F.).	5-12-23	B. N. Chopra (40 N.).	
	2-7-03	F. Doxey (28 R.).	5-12-23	H. H. Lakshman Sen (24 N.).	
10	1-6-04	G. H. Tipper (27 N.).	7-5-24	B. Bhattacharya (24 N.).	
	3-8-04	Sir Lewis L. Fermor (36 N.).	6-8-24	L. M. Davies (24 N.).	
	28-9-04	H. E. Stapleton (26 R.).	3-12-24	G. Roerich (28 F.).	40
	2-8-05	D. McCay (29 F.).	4-2-25	B. S. Guha (40 N.).	
	3-1-06	J. A. Chapman (28 N.).	6-6-27	B. D. Jain (28 R.).	
	19-7-06	R. B. Whitehead (26 N.).	5-12-27	Sir Chhajuram Chow- dhury (27 R.).	
15	3-7-07	J. Coggin Brown (28 N.).	5-12-27	H.H. Sir Tashi Namgyal (27 N.).	
	3-7-07	W. A. K. Christie (29 N.).	5-12-27	H.H. Kunzang Dechhen (27 N.).	45
	1-1-08	Sir U. N. Brahma- chari (27 R.).	6-2-28	Sir D. Ezra (28 R.).	
	7-4-09	C. A. Bentley (30 N.).	6-2-28	Sir Kaiser Shumsher Jung Bahadur Rana (28 N.).	
	4-5-10	S. B. Dhavle (10 N.).	2-7-28	N. Roerich (28 F.).	
20	4-5-10	S. W. Kemp (29 F.).	5-11-28	W. Reinhart (28 F.).	
	1-2-11	James Insch (28 R.).	4-11-29	G. de P. Cotter (32 N.).	50
	7-6-11	M. Hidayat Hosain (27 N.).	3-3-30	H. S. Ashton (30 N.).	
	5-7-11	R. B. S. Sewell (28 N.).	5-1-31	P. Evans (31 N.).	
	1-11-11	Kamaluddin Ahmad (24 N.).	1-6-31	J. Lort-Williams (40 N.).	
25	5-3-13	J. L. Simonsen (19 N.).	7-11-32	Suvarna Shumser Jung Bahadur Rana (32 N.).	
	5-11-13	C. S. Fox (40 N.).	6-2-33	J. C. Ghatak (33 R.).	55
	4-3-14	J. Bacot (14 F.).	5-2-34	H. M. Sale (34 N.).	
	5-8-14	B. C. Law (33 R.).	5-3-34	H.H. Sir K. Singh (34 N.).	
	7-4-15	Count K. Ohtani (39 F.).			

SPECIAL ANNIVERSARY HONORARY MEMBERS.

Date of Election.	(Science.)
15-1-34	PROF. ALBERT EINSTEIN, c/o Princeton University, New Jersey, U.S.A.
15-1-34	M. A. LACROIX, Secrétaire Perpetuel, Académie des Sciences, Paris.
15-1-34	SIR SYDNEY BURREARD, K.C.S.I., F.R.S., Foxhill, Salisbury Road, Farnborough, Hants, England.
15-1-34	DR. SIR SVEN HEDIN, Stockholm, Sweden.

(Letters.)

15-1-34	SIR JOHN MARSHALL, KT., c/o Messrs. Grindlay & Co., Ltd., 54, Parliament Street, London.
15-1-34	DR. RABINDRA NATH TAGORE, Santiniketan, Bolpur, Birbhum.
15-1-34	PROF. TAHA HOSAIN, Cairo.
15-1-34	PROF. ARTHUR CHRISTENSEN, 62, Raadhusevej, Charlottenlund, Denmark.
15-1-34	DR. J. VAN KAN, President, Royal Society of Arts and Letters, Batavia, Java.
15-1-34	H.R.H. PRINCE DAMRONG RAJANUBHAB OF SIAM, Siam.

ASSOCIATE MEMBERS.

Date of Election.	
1-2-22	*PIERRE JOHANNIS, REV., S.J., B.LITT. (OXON), <i>Professor of Philosophy</i> . St. Xavier's College, 30, Park Street, Calcutta.
1-2-22	*ANANTAKRISHNA SASTRI, MAHAMAHOPADHYAYA, VEDANTA-VISARADA, <i>Lecturer in Sanskrit, Calcutta University</i> . 32, College Square, Calcutta.
2-12-29	† SARAT CHANDRA ROY, RAI BAHADUR, M.A., B.L., <i>Editor, 'Man in India'</i> . Church Road, Ranchi.
1-1-34	L. DUGIN, <i>Consulate-General for France</i> , 15, Stephen Court, 18, Park Street, Calcutta.
6-3-39	REV. WILLIAM PETTIGREW, 54, Grinsdyke Road, Hatch End, Middlesex, England.
4-12-39	MISS MAUDE LINA WEST CLEGHORN, F.L.S., F.E.S. 43, Moulahat Road, Calcutta.
4-3-40	MRS. E. W. E. MACFARLENE, D.SC., c/o Burma Shell, Budge Budge.

* Re-elected for a further period of five years on 5-4-1937 under Rule 2c.

† Re-elected for a further period of five years on 6-3-1939 under Rule 2c.

INSTITUTIONAL MEMBERS.

	Date of Election.	
	28-10-29	Légatum Warnerianum (Oriental Department), University of Leyden, Leyden, Holland.
	2-12-29	Adyar Library, Adyar, Madras S.
	4-5-31	Benares Hindu University Library, Benares.
5	1-6-31	Ohtani University Library, Kyoto, Japan.
	7-12-31	Annamalai University Library, Annamalaiagar, Ohidambaram, S. India.
	30-10-33	Allahabad University Library, Allahabad.
	30-4-34	Bombay University Library, Bombay.
	6-1-36	Islamia College, Peshawar.
	4-5-36	Patna College, Patna.
10	7-12-36	Forest Research Institute, Dehra Dun.
	4-1-37	Dacca University, Dacca.
	7-6-37	Agra University, Agra.

ORDINARY FELLOWS.

	Date of Election.	
	2-2-10	Sir Prafulla Chandra Ray, KT., C.I.E., M.A., D.SC., F.N.I.
	7-2-12	C. S. Middlemiss, C.I.E., B.A., F.G.S., F.R.S.
	5-2-13	J. Ph. Vogel, PH.D., LITT.D.
5	5-2-13	S. W. Kemp, B.A., D.SC., F.R.S.
	3-2-15	G. H. Tipper, M.A., F.G.S., M.INST.M.M.
	2-2-16	Sir Richard Burn, KT., C.S.I., I.C.S. (<i>retired</i>).
	2-2-16	Sir L. L. Fermor, KT., O.B.E., A.R.S.M., D.SC., F.G.S., M.INST.M.M., F.R.S., F.N.I.
	7-2-17	F. H. Gravely, D.SC., F.N.I.
	6-2-18	J. L. Simonsen, D.SC., F.I.C., F.R.S.
10	6-2-18	D. McCay, M.D., M.R.C.P., I.M.S.
	5-2-19	J. Coggin Brown, O.B.E., M.I.M.E., F.G.S.
	5-2-19	W. A. K. Christie, B.SC., PH.D., M.INST.M.M.
	5-2-19	D. R. Bhandarkar, M.A., PH.D.
15	5-2-19	R. B. Seymour Sewell, C.I.E., M.A., SC.D., M.R.C.S., L.R.C.P., F.L.S., F.Z.S., F.R.S., F.N.I., I.M.S.
	2-2-21	Sir U. N. Brahmachari, KT., M.A., PH.D., M.D., F.S.M.F., F.N.I.
	1-2-22	Ramaprasad Chanda, B.A.
	4-2-25	M. Hidayat Hosain, PH.D.
	7-2-27	Johan van Manen, C.I.E.
	6-2-28	H. E. Stapleton, M.A., D.LITT., B.SC., I.E.S. (<i>retired</i>).
20	6-2-28	B. Prashad, D.SC., F.Z.S., F.R.S.E., F.N.I.
	6-2-28	C. A. Bentley, C.I.E., M.B., D.P.H., D.T.M. & H.
	4-2-29	Sir Albert Howard, KT., C.I.E., M.A.
	4-2-29	J. H. Hutton, C.I.E., M.A., D.SC., I.C.S.
	4-2-29	Sir Edward D. MacLagan, K.C.S.I., K.C.I.E.
25	3-2-30	G. de P. Cotter, B.A., SC.D., M.INST.M.M., F.G.S.
	3-2-30	S. L. Hora, D.SC., F.Z.S., F.R.S.E., F.N.I.
	3-2-30	J. P. Mills, I.C.S., M.A., J.F., F.N.I.
	3-2-30	Meghnad Saha, D.SC., F.R.S., F.N.I.
	2-2-31	S. Krishnaswami Aiyangar, M.A., PH.D., F.R.HIST.S.
30	2-2-31	R. N. Chopra, C.I.E., M.A., M.D., SC.D., F.N.I., I.M.S.

Date of Election.		
2-2-31	R. B. Whitehead, I.C.S. (<i>retired</i>).	
1-2-32	J. Bacot.	
6-2-33	Percy Brown, A.B.C.A.	
6-2-33	Ordhendra Coomarr Gangoly, B.A.	35
6-2-33	Ghulam Yazdani, M.A.	
5-2-34	D. N. Wadia, M.A., B.SC., F.R.G.S., F.N.I.	
3-2-36	Suniti Kumar Chatterji, M.A., D.LITT. (LOND.).	
3-2-36	A. M. Heron, D.SC. (EDIN.), F.G.S., F.R.G.S., F.R.S.E., F.N.I.	
3-2-36	Habib-ur-Rahman Shirwani.	40
15-2-37	K. N. Bahl, D.SC., D.PHIL., F.N.I.	
15-2-37	K. N. Dikshit, M.A.	
15-2-37	N. N. Law, M.A., B.L., PH.D.	
15-2-37	J. N. Mukherjee, D.SC. (LOND.), F.C.S. (LOND.), F.N.I.	
6-2-39	C. S. Fox, D.SC. (BIRM.), M.I.M.E., F.G.S., F.N.I.	45
6-2-39	B. S. Guha, M.A., PH.D. (HARVARD), F.N.I.	
5-2-40	U. N. Ghoshal, M.A., PH.D.	
5-2-40	B. C. Law, M.A., B.L., PH.D., F.R.HIST.S.	
5-2-40	R. C. Majumdar, M.A., PH.D.	
5-2-40	H. S. Pruthi, M.SC., PH.D., F.N.I.	

HONORARY FELLOWS.

Date of Election.		
5-2-96	CHARLES ROCKWELL LANMAN. 9, Farrar Street, Cambridge, Massachusetts, U.S.A.	
2-3-04	SIR GEORGE ABRAHAM GRIERSON, K.C.I.E., O.M., PH.D., D.LITT., LL.D., F.B.A., I.C.S. (<i>retired</i>). Rathfarnham, Camberley, Surrey, England.	
4-2-20	SIR AUREL STEIN, K.C.I.E., PH.D., D.LITT., D.SC., D.O.L., F.R.A. c/o Indian Institute, Oxford, England.	
4-2-20	A. FOUCHER, D.LITT. Boulevard Raspail 286, Paris, XVI ^e .	
4-2-20	SIR ARTHUR KEITH, M.D., F.R.C.S., LL.D., F.R.S.A. Royal College of Surgeons of England. Lincoln's Inn Fields, London, W.C. 2.	5
4-2-20	R. D. OLDHAM, F.R.S., F.G.S., F.R.G.S. 1, Broomfield Road, Kew, Surrey, England.	
4-2-20	SIR DAVID PRAIN, KT., C.M.G., C.I.E., M.A., M.B., LL.D., F.R.S.E., F.R.S., F.L.S., F.Z.S., M.R.I.A., LT.-COL., I.M.S., <i>Late Superintendent, Royal Botanic Garden, Calcutta, and Director, Botanical Survey of India, and late Director, Royal Botanic Gardens, Kew.</i>	
4-2-20	SIR JOSEPH LARMOR, KT., M.P., M.A., D.SC., LL.D., D.C.L., F.R.S., F.R.A.S. St. John's College, Cambridge, England.	
4-2-20	SIR JAMES FRAZER, KT., D.C.L., LL.D., LITT.D. Trinity College, Cambridge.	
4-2-20	J. TAKAKUSU. Imperial University of Tokyo, Tokyo, Japan.	10
2-3-21	F. W. THOMAS, C.I.E., M.A., PH.D., <i>Boden Professor of Sanskrit, University of Oxford.</i> 161, Woodstock Road, Oxford, England.	
7-6-22	SIR THOMAS HOLLAND, K.C.S.I., K.C.I.E., D.SC., F.R.S. <i>Principal, University of Edinburgh, Blackford Brae, Edinburgh.</i>	
7-6-22	SIR LEONARD ROGERS, KT., C.I.E., M.D., B.S., F.R.C.P., F.R.S., I.M.S. 24, Cavendish Square, London, 4.	
7-1-25	STEN KONOW. Ethnographisk Museum, Oslo, Norway.	
7-3-27	RT. HON ^{BLE} THE EARL OF LYTTON, P.C., G.C.S.I., G.C.I.E. Knebworth, Herts, England.	15

	Date of Election.	
	5-5-30	DR. R. ROBINSON, D.SC., F.R.S. The Dyson Perrins Laboratory, South Parks Road, Oxford, England.
	7-2-38	RT. HON'BLE SIR JOHN ANDERSON, P.C., G.C.B., G.C.I.E., <i>Lord Privy Seal</i> . 11, Cheapstow Vilas, London, S.W.
	4-9-39	SIR S. RADHAKRISHNAN, KT., M.A., D.LITT., <i>George V Professor of Philosophy, Calcutta University</i> . P378, Southern Avenue, P.O. Kalighat, Calcutta.
	4-9-39	PROF. DR. HEINRICH LUEDERS, Germany.
20	4-9-39	THE MOST HON. THE MARQUESS OF ZETLAND, P.C., G.C.S.I., G.C.I.E., <i>Secretary of State for India</i> . India Office, White Hall, London, S.W. 1.
	4-9-39	SIR JADUNATH SARKAR, KT., C.I.E., M.L.C., M.A., D.LITT. 169, Southern Avenue, Kalighat, Calcutta.

CHANGES IN MEMBERSHIP.

LIST OF MEMBERS WHO HAVE BEEN ABSENT FROM INDIA THREE YEARS AND UPWARDS.*

*Rule 40.—After the lapse of three years from the date of a member leaving India, if no intimation of his wishes shall in the interval have been received by the Society, his name shall be removed from the List of Members.

The following members will be removed from the next Member List of the Society under the operation of the above rule :—

Rai Bahadur S. K. Bhuyan.
P. N. Banerjee.
C. C. Calder.
H. Crookshank.
A. H. Harley.
L. E. Harris.
Major M. F. C. Martin.
Dr. H. Richter.
Jaipal Singh.
Prof. G. Tucci.
T. Williams.

LOSS OF MEMBERS DURING 1940.

BY RETIREMENT.

Ordinary Members.

1. J. C. Mitra. (1924.)
2. E. H. Rankin. (1936.)
3. E. S. Olpadvala. (1928.)
4. A. L. Coulson. (1933.)
5. A. A. Bake. (1927.)
6. E. C. Flury. (1936.)
7. Hemraj Rajguru. (1919.)
8. J. C. White. (1936.)
9. J. A. Dunn. (1929.)

BY DEATH.

Ordinary Members.

1. Rai Bahadur K. L. Barua. (1931.)
2. S. N. Wolfenden. (1937.)
3. A. C. Vidyabhusana. (1905.)
4. Rai Bahadur C. Misra. (1912.)
5. Sir E. D. Ross. (1901.)
6. J. R. Asari. (1937.)
7. J. W. A. Grieve. (1900.)

Honorary Fellow.

1. Sir Joseph John Thomson. (1915.)

UNDER RULE 38.

1. N. M. Basu. (1928.)
2. P. L. Gangoly. (1936.)
3. D. P. Ghose. (1929.)
4. R. P. Singhanian. (1935.)
5. Kumar S. C. Sinha. (1928.)
6. S. P. Mahajan. (1916.)
7. H. K. Sen. (1924.)

UNDER RULE 40.

1. G. W. Douglas. (1931.)
2. Otto Eberl. (1928.)
3. R. S. Finlow. (1906)
4. D. E. C. Kenny. (1930.)
5. H. W. Lyne. (1926.)
6. R. L. Vance. (1927.)
7. R. M. Statham. (1928.)
8. G. L. Mallam. (1930.)
9. O. G. Matthias. (1930.)
10. S. C. Chakravarty. (1930.)

MEDALLISTS.

ELLIOTT GOLD MEDAL AND CASH.

RECIPIENTS.

- 1893 Chandra Kanta Basu.
- 1895 Yati Bhusana Bhaduri.
- 1896 Jnan Saran Chakravarti.
- 1897 Sarasi Lal Sarkar.
- 1901 Sarasi Lal Sarkar.
- 1904 { Sarasi Lal Sarkar.
- Surendra Nath Maitra.
- 1907 Akshoy Kumar Mazumdar
- 1911 { Jitendra Nath Rakshit.
- Jatindra Mohan Datta.
- Rasik Lal Datta.
- 1913 { Saradakanta Ganguly.
- Nagendra Chandra Nag.
- Nilratan Dhar.
- 1918 Bibhutibhushan Dutta.
- 1919 Jnanendra Chandra Ghosh.
- 1922 Abani Bhusan Datta.
- 1923 Bhailal M. Amin.
- 1926 Bidhu Bhusan Ray.
- 1927 Kalipada Biswas.
- 1931 T. C. N. Singh.
- 1932 P. N. Das-Gupta.
- 1933 Nirmal Kumar Sen.
- 1934 D. P. Roy Chowdhury.
- 1935 Kalipada Biswas.
- 1937 Pulin Behari Sarkar.
- 1939 P. K. Chatterjee.

BARCLAY MEMORIAL MEDAL.

RECIPIENTS.

- 1901 E. Ernest Green.
- 1903 Sir Ronald Ross, KT., K.C.B., C.I.E., K.C.M.G., M.R.C.S., F.R.C.S.,
D.P.H., LL.D., D.S.C., M.D., F.R.S.
- 1905 D. D. Cunningham, C.I.E., F.R.S.
- 1907 A. W. Alcock, C.I.E., M.B., LL.D., F.R.S.
- 1909 Sir David Prain, KT., C.I.E., C.M.G., M.A., M.B., LL.D., F.R.S.E.,
F.L.S., F.Z.S., M.R.I.A., F.R.S.
- 1911 Carl Diener.
- 1913 William Glen Liston, C.I.E., M.D., D.P.H.
- 1915 J. S. Gamble, C.I.E., M.A., F.R.S.
- 1917 H. H. Godwin-Austen, F.R.S., F.Z.S., F.R.G.S.
- 1919 N. Annandale, C.I.E., D.S.C., C.M.Z.S., F.L.S., F.R.S., F.A.S.B.
- 1921 Sir Leonard Rogers, KT., C.I.E., M.D., B.S., F.R.C.P., F.R.C.S.,
F.R.S.
- 1923 Sir Samuel Christophers, KT., C.I.E., O.B.E., F.R.S., F.A.S.B., M.B.,
LT.-COL., I.M.S.

- 1925 J. Stephenson, C.I.E., B.SC., M.B., CH.B., F.R.S., F.R.C.S., F.R.S.E.,
LT.-COL., I.M.S.
1927 S. W. Kemp, B.A., D.SC., F.R.S., F.A.S.B.
1929 Sir Albert Howard, KT., C.I.E., M.A., F.A.S.B.
1931 R. B. Seymour Sewell, C.I.E., M.A., SC.D. (CANTAB.), M.R.C.S.,
L.R.C.P., F.Z.S., F.L.S., F.R.A.S.B., F.R.S., LT.-COL., I.M.S.
1933 R. Row, O.B.E., D.SC.
1935 B. Sahni, M.A., SC.D. (CANTAB.), D.SC., F.G.S., F.R.A.S.B.
1937 R. N. Chopra, C.I.E., M.A., M.D. (CANTAB.), F.R.A.S.B., BT.-COL.,
I.M.S.
1939 Major-General R. McCarrison, KT., C.I.E., M.D., D.SC., F.R.C.P.,
LL.D., K.H.F., I.M.S. (RETD.).

SIR WILLIAM JONES MEMORIAL MEDAL.

RECIPIENTS.

- 1927 Sir Malcolm Watson, KT., LL.D. (HON.), M.D., C.M., D.P.H.
1928 Sir George A. Grierson, K.C.I.E., O.M., PH.D., D.LITT., LL.D., F.B.A.
(HON.), F.R.A.S.B., I.C.S. (*retired*).
1930 Dr. Felix H. D'Herelle.
1932 Dr. C. Snouck Hurgronje.
1934 Rai Sir Upendra Nath Brahmachari, Bahadur, KT., M.A., M.D.,
PH.D., F.S.M.F., F.R.A.S.B.
1937 Prof. Dr. A. J. Wensinck.

ANNANDALE MEMORIAL MEDAL.

RECIPIENTS.

- 1927 Fritz Sarasin.
1930 Dr. Charles Gabriel Seligman, M.D., F.R.C.P., F.R.S.
1933 Dr. Eugène Dubois.
1936 Dr. John Henry Hutton, C.I.E., I.C.S. (*retired*), M.A., D.SC., F.R.A.S.B.
1939 Prof. Frank Weidenreich.

JOY GOBIND LAW MEMORIAL MEDAL.

RECIPIENTS.

- 1929 Max Weber.
1932 Dr. Ernst J. O. Hartert, PH.D.
1935 Prof. Leo Semenowitch Berg.
1938 Dr. Bains Prashad, D.SC., F.Z.S., F.R.S.E., F.R.A.S.B.

PAUL JOHANNES BRÜHL MEMORIAL MEDAL.

RECIPIENTS.

- 1931 Rev. Ethelbert Blatter, S.J.
1934 Isaac Henry Burkill, M.A.
1938 Sir David Prain, KT., F.R.S.

INDIAN SCIENCE CONGRESS MEDAL, CALCUTTA.

RECIPIENTS.

- 1935 Meghnad Saha, D.SC., F.R.S., F.R.A.S.B.
1938 Sir James H. Jeans, D.SC., SC.D., LL.D., F.I.C., F.R.S.

PROCEEDINGS OF THE ORDINARY MONTHLY MEETINGS, 1940

JANUARY

(No Meeting)

FEBRUARY

An Ordinary Monthly Meeting of the Royal Asiatic Society of Bengal was held on Monday, the 5th February, 1940, immediately after the termination of the Annual Meeting, for the election of Ordinary Members and the transaction of business.

PRESENT

BT.-COL. R. N. CHOPRA, C.I.E., M.A., Sc.D., M.D., F.R.C.S., F.N.I., F.R.A.S.B., I.M.S., Vice-President, in the Chair.

Members :

Biswas, Dr. K. P.
Brahmachari, Sir U. N.
Brown, Mr. Percy
Chakravarti, Prof. C.
Chatterji, Dr. S. K.
Chaudhuri, Dr. Roma
Fox, Dr. C. S.
Ghose, Mr. S. K.
Ghosal, Dr. U. N.
Guha, Dr. B. S.
Haq, Prof. M. M.
Hobbs, Major H.

Kramrisch, Dr. Stella
Law, Dr. S. C.
Meyer, Miss S.
Mukherjee, Dr. J. N.
Parker, Capt. E.
Pasricha, Major C. L.
Prashad, Dr. Baini
Rahman, Prof. S. K.
Ray Chaudhury, Prof. H. C.
Saha, Dr. M. N.
Sarkar, Sir Jadunath
Siddiqi, Dr. M. Z.

The minutes of the last meeting were read and confirmed.

The General Secretary announced that no meeting was held in January, 1940, for want of a quorum.

The General Secretary announced that the presentations of books, etc., received since the previous meeting, would be exhibited at the next Ordinary Monthly Meeting.

The following candidates were ballotted for for election as Ordinary Members :—

(1) Roy, B. C., B.A., M.D., F.R.C.S. (Eng.), M.R.C.P. (Lond.), F.S.M.F. (Bengal), 36, Wellington Street, Calcutta.

Proposer: R. N. Chopra.

Seconder: B. S. Guha.

(2) *Basu, Mriganka Mauki*, Member of the Indian Civil Service, Chinsurah, Dist. Hooghly.

Proposer: J. N. Mukherjee.
 Seconder: Baini Prashad.

(3) *Singh, Ganda*, Professor, Khalsa College, Amritsar.

Proposer: Sri Ram Sharma.
 Seconder: R. Sinh.

(4) *Mukerji, Jogesh Chandra*, Medical Practitioner, 22, Park Street, Calcutta.

Proposer: J. N. Mukherjee.
 Seconder: Baini Prashad.

(5) *Ghatak, Indu Bhushan*, B.A. (Cal.), C.T.E. (Dac.), Med. (Amb.), Dip. Lbr. (B.L.A.), Examiner, Patna University, Lecturer, St. John Ambulance Association, Ex-member, Subordinate Educational Service, C.P., Associate, Red Cross Society, Headmaster, Raj High School, Garh Banaili P.O., (Purnea).

Proposer: B. S. Guha.
 Seconder: Sir David Ezra.

(6) *Huda, Syed Shamsul*, Research Scholar (Anjuman Taraqqee Urdu, Delhi), 3B, Taltolla, Entally, Calcutta.

Proposer: M. Hidayat Hosain.
 Seconder: M. Mahfuz-ul Haq.

(7) *Fleming, Andrew*, Rand Club, Johannesburg.

Proposer: Baini Prashad.
 Seconder: B. S. Guha.

(8) *Sen, S. C.*, B.Sc. (Cal.), B.A. (Cantab.), A.M.I.Chem.E. (Lond.), Supdt., Cinchona Cultivation in Bengal, Mungpoo, Riyand, D.H.Ry.

Proposer: K. Biswas.
 Seconder: J. N. Mukherjee.

(9) *Pask, John David*, B.Sc., Ph.D. (Leeds), Chief Chemist, Howrah Mills Co., Ltd., Ramkrishnapur, Howrah.

Proposer: J. N. Mukherjee.
 Seconder: Baini Prashad.

(10) *Bhatnagar, Onkar P.*, B.A., Visharad, Ajmer Road, Jaipur.

Proposer: B. S. Guha.
 Seconder: Percy Brown.

(11) *Law, Ananta Churn*, Attorney-at-Law, 23, Badur Bagan Road, Calcutta.

Proposer: S. C. Law.
 Seconder: S. P. Mookerjee.

The General Secretary reported the following loss of membership, since the previous meeting, by death:—

(6) Sir D. Hamilton (An Ordinary Member, 1930).

(1) Rai Bahadur Kanak Lal Barua (An Ordinary Member, 1931).

The General Secretary reported the following loss of membership, since the previous meeting, by resignation:—

(14) Madan Gopal Daga (An Ordinary Member, 1936).

(15) L. Brooke Edwards (An Ordinary Member, 1929).

(1) J. C. Mitra (An Ordinary Member, 1924).

The General Secretary reported that there had been no lapses of election, since the previous meeting, under Rule 9.

The General Secretary reported that there had been no withdrawals of application, since the previous meeting.

In accordance with Rule 38, the General Secretary announced that the names of the following Ordinary Members would be suspended as defaulters within the Society's building for the period of one month to be removed from the Society's registers for non-payment unless the amount due be paid before the next Ordinary Monthly Meeting:—

1. N. M. Basu	..	..	Rs.117
2. P. L. Gangoly	..	..	99
3. D. P. Ghosh	..	..	99
4. R. P. Singhanian	..	..	108
5. Kumar S. C. Sinha	..	..	93
6. S. P. Mahajan	..	..	78
7. H. K. Sen	..	..	108

In accordance with Rule 2(c), the General Secretary announced that the Council had recommended for election the following lady as an Associate Member for a period of five years:—

Dr. E. W. E. Macfarlane (Mrs.).

The Chairman announced the result of the ballot for the election of the Ordinary Members and declared that all the candidates had been duly elected.

The Chairman announced that no meeting of the Medical Section had yet been arranged to be held during the month.



MARCH

An Ordinary Monthly Meeting of the Royal Asiatic Society of Bengal was held on Monday, the 4th March, 1940, at 5-30 P.M.

PRESENT

SIR BIJOY CHAND MAHTAB, G.C.I.E., K.C.S.I., I.O.M., MAHARAJADHIRAJA BAHADUR OF BURDWAN, Vice-President, in the Chair up to 6 P.M.

SIR DAVID EZRA, Kt., F.Z.S., M.B.O.U., in the Chair, after 6 P.M.

Members :

Bose, Prof. M. M.
Brown, Mr. Percy
Chatterjee, Mr. M. M.
Chattopadhyay, Mr. K. P.
Chakravarti, Prof. C.
Chopra, Dr. B. N.
Cleghorn, Miss M. L.
Dugin, Mr. L. S.

Ghosal, Dr. U. N.
Guha, Dr. B. S.
Haq, Prof. M. M.
Hobbs, Major H.
Hosain, Dr. M. H.
Majumdar, Mr. J. M.
Mullick, Mr. M. L.
White, Mr. J. C.

Visitors :

Brown, Mrs. Percy
Datta, Mr. J. M.
Datta, Mr. Narayana Pada
Ezra, Lady

Ghosh, Mrs. Leela
Ray, Mr. N. N.
Roonwal, Mr. M. L.
Sen, Mr. M.

The minutes of the last meeting were read and confirmed.

The General Secretary announced receipt of the following forty-two presentations of books, etc., which had been kept on the table for inspection:—

- (1) From Mr. J. N. Gupta—'Bikrampur Itihasa, Pt. 1'.
- (2) „ Messrs. Percy Lund Humphries & Co.—'Native Races of Asia and Europe'.
- (3-9) From Archaeological Dept., Travancore—'Administration Reports from 1107-1113'.
- (10-13) From Maharajkumar Raghubir Singh—'Indian States and New Regime', 'Sapta Dwip', 'Malwa me Yugantar', 'Sesh Smritiyan'.
- (14) From Abdul Majid—'Tarikh-i-Golkonda'.
- (15) „ Government of Travancore—'Travancore Tribes and Castes, Vol. II'.
- (16) From Kumar S. Deo—'Nandapur, Part I'.
- (17-20) Royal Asiatic Soc. of Bengal—'Manusmriti, Vol. 3', 'Ain-i-Akbari, Eng. trans., Vol. I', 'Haft-Iqlim, Fasc. 3', and 'Tabaqat-i-Akbari, Eng. trans., Vol. 3, Pt. 2'.
- (21-23) From Government of Bengal—'Fauna of British India, Nematoda, Vol. II', 'Coleoptera Staphylindae, Vol. IV, Pts. I and II'.
- (24) From A. L. Srivastava, Esq.—'Shuja-ud-Dowla, Vol. I'.
- (25) „ H. R. Gupta, Esq.—'History of the Sikhs, 1739-68'.
- (26) „ the Calcutta University—'Alivardi and his Times'.
- (27) „ the National Spiritual Assembly of the Bahai's of India, etc.—'The Bahai World, etc.'.
- (28-29) From Royal Asiatic Society—'Bibliography of Moslem Numismatic', 'Marriage in early Islam'.
- (30) From Sir Aurel Stein—'In Memoriam: Filippo de Filippi'.
- (31-32) From Government of India—'Monuments of Sanchi, Vols. I-III'.
- (33) From K. A. Ramanathan, Esq., and S. M. Mukherjee, Esq.—'A Seismological Study of the Baluchistan (Quetta) Earthquake of 1935'.
- (34) From the Calcutta University—'Studies in the Tantras, Pt. I'.
- (35) „ the Imperial Library—'Catalogue, Part 2'.
- (36) „ Pt. N. C. Vedantatirtha—'Brahman Parichaya'.
- (37) „ Bangiya Shitya Parisad—'Parisat-Parichaya'.
- (38) „ Royal Asiatic Soc. of Bengal—'Descriptive Cat. of Sans. MSS., Vol. 8, Tantra, Pt. 1'.
- (39-40) From the Calcutta University—'Karpuramanjari' and 'Hetutavaupadesa'.
- (41) From Syed Ata Husain, Esq.—'Tarjuma-i-Adabu'l muridin'.
- (42) „ Oxford University Press—'Song of Lovers'.

The following candidates were ballotted for election as Ordinary Members:—

(12) *Haryana, Ram Adhar*, B.A., Dy. Jailor (U.P. Jails), District Jail, Etah, (U.P.).

Proposer: B. S. Guha.

Seconder: M. Hidayat Hosain.

(13) *Bruce, Alexander Edwin Robert*, B.A., A.C.P., M.R.S.T., M.R.A.S., F.R.G.S., A.R.I.P.H.H., Principal, Rathlin Hall School, Darjeeling.

Proposer: B. S. Guha.

Seconder: M. Hidayat Hosain.

(14) *Mazumdar, Dwijendra Lal*, Indian Civil Service, 11A, Mayfair, Ballygunge, Calcutta.

Proposer: B. S. Guha.

Seconder: M. Hidayat Hosain.

(15) *Harshé, Ramkrishna Ganesh*, B.A. (Tilak), D.Litt. (Paris), Registrar, Deccan College Post-Graduate and Research Institute, Poona.

Proposer: B. S. Guha.

Seconder: M. Hidayat Hosain.

(16) *Bell, Frank Owen*, Indian Civil Service, S.O., Dinajpur.

Proposer: B. S. Guha.

Seconder: M. Hidayat Hosain.

(17) *Crawford, C. E. J.*, B.A., B.Sc., Technical Staff, Imperial Chemical Industries (India) Ltd., 18, Strand Road, Calcutta.

Proposer: B. S. Guha.

Seconder: M. Hidayat Hosain.

The General Secretary announced the following loss of membership, since the previous meeting, by death:—

(2) S. N. Wolfenden (An Ordinary Member, 1937).

The General Secretary announced the following loss of membership, since the previous meeting, by resignation:—

(2) E. H. Rankin (An Ordinary Member, 1936).

The General Secretary reported that there had been no lapses of election, since the previous meeting, under Rule 9.

The General Secretary reported that there had been no withdrawals of application since the previous meeting.

In accordance with Rule 38, the General Secretary announced that the names of the following Ordinary Members whose names had, since the last Monthly Meeting, been suspended as defaulters within the Society's building had now been removed as defaulters from the Society's registers for non-payment of dues:—

- | | |
|----------------------|-----------------------|
| 1. N. M. Basu. | 5. Kumar S. C. Sinha. |
| 2. P. L. Gangoly. | 6. S. P. Mahajan. |
| 3. D. P. Ghosh. | 7. H. K. Sen. |
| 4. R. P. Singhanian. | |

In accordance with Rules 2 and 3, the Chairman called for ballot for the election of—

Dr. E. W. E. Macfarlane (Mrs.)

who had been proposed for election in the last Ordinary Monthly Meeting as an Associate Member for a period of five years.

In accordance with Rule 4, the General Secretary announced that in conformity with recommendations of the Special Enquiry Committee of 1939 the Council recommends for confirmation the following appointments, made since the last Ordinary Monthly Meeting :—

1. Additional Secretary for Philosophy—Sir S. Radhakrishnan.
2. Additional Secretary for History and Archaeology—Dr. Kalidas Nag.

Order: Confirm.

The General Secretary announced the composition of various Standing Committees of the Society for 1940-41 to be as follows:—

Finance Committee :

President	} <i>Ex-officio.</i>
General Secretary	
Treasurer	
Dr. C. S. Fox.	
Dr. S. C. Law.	
Dr. S. P. Mookerjee.	
Dr. J. N. Mukherjee.	
Major C. L. Pasricha.	

Library Committee :

President	} <i>Ex-officio.</i>	} <i>Secretaries.</i>
General Secretary		
Treasurer		
Philological		
Jt. Philological		
Physical Science		
Biological Science		
Anthropological		
Medical		
Philosophical		
Historical and Archaeological		
Library		

Publication Committee :

President	} <i>Ex-officio.</i>	} <i>Secretaries.</i>
General Secretary		
Treasurer		
Philological		
Jt. Philological		
Physical Science		
Biological		
Anthropological		
Medical		
Philosophical		
Historical and Archaeological		
Library		

Bibliotheca Indica Committee :

President	} <i>Ex-officio.</i>
General Secretary	
Treasurer	

Dr. S. K. Chatterji.
 Mr. M. Mahfuz-ul Haq.
 Dr. B. C. Law.
 Sir S. Radhakrishnan.
 Sir Jadunath Sarkar.
 Dr. M. Z. Siddiqi.

The following exhibit was shown and commented upon:—

1. PERCY BROWN.—*A note on (a) Two old Japanese 'How-to-Draw' books, and (b) An old Japanese book on repeating patterns for textiles such as brocades, etc.*

The two drawing books give illustrations, supplemented by certain written instructions, of the methods to be employed by the student in depicting objects from life, such as birds, fishes, insects, plants and trees, by means of a black outline applied by the brush.

In one book all the artist's materials and the method of using them are shown, as well as a number of technical details relating to the process of workmanship.

The other book, which may be a little older than the former, probably dating from the end of the 18th century, contains a number of diagrams illustrating the artist's theory that most subjects can be drawn by means of a geometrical formula. The manner in which he endeavours to prove this is depicted in a most graphic and convincing manner.

The third book, of a period rather later than the others, is a large collection of designs reproduced in black outline evidently intended for the use of textile workers.

The following communications were made:—

1. EILEEN W. E. MACFARLANE.—*Mother and Child Combinations of Blood Groups and Blood Types in Calcutta.*

Bloods from 252 matching pairs of mothers and babies were grouped: among these 127 were homospecific and 125 were heterospecific. There is no significant difference in frequency of premature births nor in weight at birth between these two groups. Agglutination time of agglutinin B in cord blood is similar to that in adults but for A it is almost twice as long. Only about one-third of the infants have demonstrable agglutinin at birth. Sub-group A_2 is found in between 2% and 3% only of Indians in Calcutta. One hundred matching pairs of mothers and babies were typed for M, MN and N. Among them 56 were homotypic and 44 heterotypic. No exceptions to the expected possible combinations of mother-child blood types or blood groups were found. The proportions

of the blood types were found to be of the same order as reported for Calcutta by previous workers, with somewhat more of MN and less of type M. The Calcutta Muslims examined resemble in their blood group proportions the up-country Khatri and not the rural Bengali Muslims.

2. N. P. DUTTA.—*A note on Solubility and Dissociation Constant of Stearic Acid.*

Widely divergent values are found in the literature for the solubility of stearic acid, for example, the value obtained by Moore¹ is 3.5×10^{-3} N at 37°, by Siedell² is 1.2×10^{-3} N at 25°, and by McBain³ is 4.1×10^{-7} N at 25°. It was therefore thought desirable to determine the solubility of the acid. The method employed is as follows: Large quantities of stearic acid hydrosol and also conductivity water saturated with stearic acid by shaking or by keeping at 60–65° for several hours then cooling to the desired temperature were ultrafiltered through 'Cella' (finest) membranes. The filtrate was evaporated in small instalments from a platinum bowl and weighed after drying in a vacuum desiccator. The values obtained varied from 1.16×10^{-5} N to 1.19×10^{-5} N and the mean of four separate determinations is 1.18×10^{-5} N at $35^\circ \pm 0.5$ C.

Regarding the dissociation constant of stearic acid very little is known. A value of 0.8×10^{-8} has been taken by McBain (*loc. cit.*) for the same. The titration curves of colloidal stearic acid with NaOH resemble in some respects those of a weak acid but also differ as regards others. The Henderson equation cannot be applied to obtain the dissociation constant of the acid from the titration curves. If we take colloidal stearic acid to behave as a weak acid obeying the law of mass action and assume the activity coefficient to be unity at these low concentrations then the following equation should hold: $[H^+][\text{stearate}^-] = k[H-\text{stearate}] = k.Su = S$ where Su is the concentration of the undissociated acid in equilibrium with the solid phase. For the pure sol $[H^+] = [\text{stearate}^-]$ and $[H^+]$ can be obtained from (a) pH of the sol, (b) sp. conductivity of the sol to which $[H^+]$ is related by the equation $(u+v)[H^+] \times 10^8 = \rho$ (sp. cond. in rec. ohms). Further, in the case of the titration of the sol with NaOH the above equation reduces to: $[H^+][\text{stearate}^-] = [H^+]\{[Na^+] + [H^+] - [OH^-]\} = k.Su = S$, since $[\text{stearate}^-] = [Na^+] + [H^+] - [OH^-]$ and therefore $k.Su$ can be evaluated from definite points in the titration curves, $[Na^+]$ being known from the amount of alkali added to the sol and

¹ Moore, Hutchinson and Wilson : Biochem. Jour., 1909, 12, 347.

² Siedell : Bull. No. 67, Hygienic Laboratory, U.S. Public Health Service.

³ McBain : Proc. Roy. Soc., A, Vol. 125, 1929.

[H⁺] and [OH⁻] from the pH of the sol at that point. The results obtained by different methods are given below:

Sol.	$k.Su \times 10^{-12}$					
	(a) pH of sol.	(b) Sp. cond.	(c) Points in the titration curves.			
			$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	Final inflexion.
A	17.30	21.00	19.00	20.20	26.10	25.70
B	19.05	25.90	26.00	24.70	..	..
C	29.89	24.90	..	..	19.60	18.40

It is interesting to note that the values obtained by different methods are of the same order and do not differ much from one another considering the experimental difficulties. Now the values from the pH of the sol are expected to be in larger error. The values obtained from $\frac{1}{4}$, $\frac{3}{4}$ and final neutralization points of NaOH titration curves are liable to some error because the slopes of the curves at these points are considerable. The values obtained from sp. conductivity data and from half neutralization point are less liable to error. The mean of the above values is 21×10^{-12} . Now if we divide the mean value of $k.Su$ by the mean value of solubility of stearic acid the dissociation constant of stearic acid becomes 1.77×10^{-6} .

3. CHINTAHARAN CHAKRAVARTI.—*Study of manuscripts.*

Owing to the lateness of the hour the communication by Prof. Chakravarti was held over until the next meeting.

The Chairman announced the result of the ballot for the election of Ordinary Members and an Associate Member and declared that all the candidates had been duly elected.

The Chairman announced that the following General Lectures, illustrated with lantern slides, would be delivered in the rooms of the Society:—

1. DR. C. S. FOX.—*Progress of Mineral Development in India*, on 18th March, 1940, at 6-30 P.M.
2. BT.-COL. R. N. CHOPRA.—*The Use of Hemp Drugs in India*, on 29th March, 1940, at 6-30 P.M.



APRIL

An Ordinary Monthly Meeting of the Royal Asiatic Society of Bengal was held on Monday, the 1st April, 1940, at 5-30 p.m.

PRESENT

BAINI PRASHAD, ESQ., D.Sc., F.Z.S., F.R.S.E., F.N.I., F.R.A.S.B., Hony. Treasurer, in the Chair.

Members :

Chakravarti, Prof. C.
Chatterjee, Mr. P. P.
Cleghorn, Miss M. L. C.
Dugin, Mr. L. S.
Guha, Dr. B. S.
Haq, Prof. M. M.

Hobbs, Major H.
Hora, Dr. S. L.
Hosain, Dr. M. H.
Macfarlane, Dr. M. H.
Mukherjee, Mr. S. C.
and others.

Visitors :

Datta, Mr. J. M.
Enversaid, Dr.

Enversaid, Mme.

The minutes of the last meeting were read and confirmed.

The General Secretary announced receipt of the following nine presentations of books, etc., which had been placed on the table for inspection :—

- (1) From Government of India—'Specimens of Arabic and Persian Palaeography'.
- (2-4) From Madras University—'Diwan-i-Azfarī', 'Tuzak-i-walajahi, Pt. 1', and 'Diwar-i-Bider'.
- (5) From Government of Bengal—'Press List of Ancient Documents, etc.'.
- (6) From Madras University—'Sources of History of the Nawabs of Carnatic II'.
- (7) From Sir Arthur Du Cros—'Wheels of Fortune'.
- (8) „ Archaeological Survey of India—'Memoirs, No. 59'.
- (9) „ Royal Society of London—'Year Book, 1940'.

The General Secretary announced the receipt of 172 foreign coins presented by the Master of His Majesty's Mint, Calcutta.

The General Secretary announced that no application for Ordinary Membership had been received since the previous meeting.

The General Secretary announced that there had been no loss of membership, since the previous meeting, by death.

The Chairman called upon Dr. B. S. Guha to read an obituary notice of Rai Bahadur Kanak Lal Barua (see p. 190).

The General Secretary announced that there had been no loss of membership, since the previous meeting, by resignation.

The General Secretary reported that there had been no lapses of election, since the previous meeting, under Rule 9.

The General Secretary reported that there had been no withdrawals of application since the previous meeting.

The following papers were read:—

1. JATINDRA MOHAN DATTA.—*Bagh-Chal at Kamakhya.*

In March 1939 the author visited Kamakhya, 5 miles to the west of Gauhati in Assam. There are two stone-flagged slopes to the Temple on the top of the hills—the eastern one much broader, and the western one steep. Down the western descent there is a stone-wall and a few yards outside this wall, on the stone-flagging he found the diagram of the above game chiselled. Two local Nepali boys were playing the game of Bagh-Chal, with two tigers and twenty pieces for goats. The usual rule of capture by jumping over the piece to the next vacant point in a straight line is followed. Sedentary games were popular in the time of Emperor Akbar.

2. JATINDRA MOHAN DATTA.—*Challis-Ghuttia and its degenerate variants.*

In this paper, the author observed the following game described as Challis-Ghuttia (the game of forty pieces) being played by men in the streets of Calcutta near Ultadanga. They all hailed from Jaunpur in the United Provinces; and they told him that this game is also played in their home district. The description of the game is given. A similar game Rattichitti-Bakri (Red-White Goats) was described by the late Prof. Hem Chandra Das Gupta in 'Sedentary Games prevalent in the Punjab'.

3. DAYA SHANKAR SARBAHI.—*The Alimentary Canal of Labeo rohita (Hamilton).*

The author gives a detailed account of the morphology and histology of the alimentary canal of Rohu, *Labeo rohita* (Hamilton), under the following headings: the mouth, the buccal cavity, the pharynx, the œsophagus, the intestinal bulb, the intestine and the rectum. The glands of the alimentary canal, the liver and the pancreas, are also similarly treated. The morphology and histology of the ductless glands, such as the spleen, the thyroid and the thymus, are given. At the end there is a comprehensive list of literature dealing with the subject.

The following exhibit was shown and commented upon:—

1. B. S. GUHA.—*Three Tibetan Manuscripts.*

(1) This is the biography of the Great Tibetan Yoga Milaspa who was born in 1038 A.D. He was the Guru of the Kargyudpa Sect of Lamaism. He was a black magician and had the power to fly in the air. He had shown many miraculous

powers and works to the people of Upper Tibet. His birth-place was Kyangatsa near Kirong. He practised Yoga meditations amid the snowy fastnesses of the Himalaya mountains near Nepal. He has eight higher disciples. The picture on the first page is the first disciple named Raschungpa. On the second page there are two pictures: one is Shiwa Wod Repa, the other Ngan Dzongrepa. Milaraspas was a practical master of higher Tantras of the Mahayana Buddhism.

There are seven branches of Kargyudpa monasteries in Tibet.

This is a very famous and favourite book of Tibet. It is admired by the literary and learned classes as well as the common people.

This manuscript was written eight hundred years ago. In Tibet all the Lamas of different Sects and all Tibetan scholars hold it in high esteem.

(2) This is a Lamas' religious prayer book. When the Lamas perform this ceremony they must read the book together and at the same time they have to make the mystic signs with their hands and fingers. When making votive offerings or casting spells the mystical language of this book must be used. It was written by Lama Gedungyatso palzangpo in the horse year at the north of Lohita river side.

(3) This is the explanation for the three Great Lamas of the yellow sect Gelugpa: (i) Tsongkhapa who founded the great monastery Garden and his follower (ii) Jamyang gyatso who founded the great monastery hBras Spung, and (iii) Byams chen choje who founded the Sera monastery Tsoungkpa, established big prayer meetings celebrated at Lhasa every year and founded many monasteries in Tibet. In many Buddhist books prophecies about them were written; how they would be an incarnation of Buddha, when and at what places they would be born, and by what names they would be called. All these have been proved true and all the three Great Lamas' life-stories are written in a brief manner by Lama Lab zang ye She at Kah dam pho brang.

The following communication was made:—

1. CHINTAHARAN CHAKRAVARTI.—*Study of manuscripts.*

Many-sided importance of a careful study of old manuscripts. History of the collection, preservation and study of manuscripts in Sanskrit and different vernaculars of India. Reference to the large stocks of manuscripts still lying uncared for and uncatalogued in many parts of the country exposed to the mercy of the white ants and the ravages of the climate not at all favourable for the preservation of manuscripts. Imperative necessity of the preparation and publication of scientific catalogues and systematic and scholarly analysis of the contents of manuscripts which being more fragile than monuments of

stone and other materials are fast disappearing with the vast store of much useful information contained in them. Difficulties in the way—paucity of funds, lack of requisite encouragement and proper appreciation, dearth of persevering and painstaking workers. Hence the defects commonly met with especially in Indian catalogues: superficial descriptions, wrong or incomplete titles, imperfect indication of subject-matters, reproduction in a stereotyped fashion of portions from the beginning and the end, etc. Ideals of a good catalogue: proper indication of the subject-matter, identification of the correct titles, reference to the peculiarities, if any, in the case of works already published or described in manuscript catalogues. Suggestion for the addition of a new wing of the Archæological Department called the Manuscript Department for giving impetus to and directions for a systematic study of manuscripts and for the introduction of a *Manuscriptia Indica* of the type of the *Epigraphia Indica* for the publication of thorough analysis of important manuscripts pointing to their importance and usefulness.

The Chairman announced that the following General Lecture would be delivered on Tuesday, the 2nd April, 1940, at 6-30 P.M. :—

R. KODANDA RAO.—*Eastern and Western Civilization—A Denial of Contrast.*



MAY

An Ordinary Monthly Meeting of the Royal Asiatic Society of Bengal was held on Monday, the 6th May, 1940, at 5-30 P.M.

PRESENT

PROF. M. MAHFUZ-UL HAQ, M.A., Joint Philological Secretary, in the Chair.

Members :

Anderson, Mr. J.
Ayrton, Mr. S. M.
Chakravarti, Prof. C.
Chatterjee, Mr. P. P.
Cleghorn, Miss M. L.

Guha, Dr. B. S.
Hosain, Dr. M. H.
Majumdar, Mr. J. M.
Pasricha, Major C. L.
Rahman, Prof. S. K.

Visitors :

Cleghorn, Miss O. C.
Datta, Mr. J. M.
Dhar, Mr. G.

Khosla, Mr. R. N.
Roy Chowdhury, Prof. M. L.
Singh, Mr. B. H.
Singh, Mr. B. P.

The minutes of the last meeting were read and confirmed.

The General Secretary reported receipt of the following fifteen presentations of books, etc., which had been kept on the table for inspection:—

- (1) From Syed Mohd. Badruddin Allavi, Esq.—‘Arabian Poetry and Poets’.
- (2) From the Punjab Government—‘Sirmur State Gazetteer’.
- (3) „ Tata, Iron and Steel Co., Ltd., Bombay—‘Perin Memorial Lectures’.
- (4) From Kungl. Biblioteket, Stockholm—‘Accessions Katalog No. 53 of 1938’.
- (5-6) From Madras Government—‘Guide to the Archaeological Galleries’ and ‘Illustrations of Indian Sculptures’.
- (7-8) From Kungl. Svenska Vetenskapsacademien, Stockholm—‘Johan Carl Willeke, experimental-fysiker’ and ‘Pehr Wilhelm Wangentim’.
- (9) From H.E.H. The Nizam’s Government—‘Ajanta, Texts, Pts. I-II and Plates, Pts. I-II’.
- (10-11) From Visva-Bharati—‘Monograph of Modern Calligraphy’ and ‘Grammar of the Braj-Bhakha’.
- (12-14) From Visva-Bharati—‘Catuhsataka of Arya deva’, ‘Trisva-bhavanirdesa’ and ‘Brahman sutras’.
- (15) From Government Oriental MSS. Library, Madras—‘Descriptive Catalogue of Government MSS., Vol. 28 Supplement’.

The following candidates were ballotted for for election as Ordinary Members:—

(20) *Srinivasan, K. R.*, M.A., Curator, State Museum, Pudukkottai, South India.

Proposer: R. C. Majumdar.
 Seconder: B. S. Guha.

(21) *Venkataraman, K. R.*, B.A., L.T., Lecturer, Maharaja’s College—now Editor, State Manual and History, Maharaja’s College, Pudukkottai, South India.

Proposer: R. C. Majumdar.
 Seconder: B. S. Guha.

(22) *Bharucha, Farrokh E.*, Merchant, Canada Building, Hornby Road, Bombay.

Proposer: Baini Prashad.
 Seconder: B. S. Guha.

(23) *Chakrabarti, Bisweswar*, Teacher of History, Dogachi, Dacca.

Proposer: N. K. Bhattasali.
 Seconder: B. S. Guha.

(24) *Griffiths, Walter Geraldson*, B.Sc. (Calif.), B.D. (Drew), M.A. (New York), Ph.D. (Drew), Missionary, 13, Wellington Sqr., Calcutta.

Proposer: B. S. Guha.
 Seconder: Baini Prashad.

(25) *Akbar, Mohammad Gholam*, M.A., Lecturer in Persian, P.G. Dept., Calcutta University, Carmichael Hostel, 51, Baitakkhana Road, Calcutta.

Proposer: M. Z. Siddiqi.
 Seconder: S. K. Rahman.

(26) *Osman, Mohd.*, M.A., Lecturer in Arabic and Persian, Calcutta University, 7, Rajmohan Street, Calcutta.

Proposer: M. Z. Siddiqi.

Seconder: S. K. Rahman.

(27) *Asadullah, Khalifa Mohammad*, Khan Bahadur, General Central Service Class I, Librarian, Imperial Library, 6, Esplanade East, Calcutta.

Proposer: M. Z. Siddiqi.

Seconder: B. S. Guha.

The General Secretary announced the following loss of membership, since the previous meeting, by death:—

1. Prof. Amulya Charan Vidyabhusana (An Ordinary Member, 1905).
2. Rai Bahadur Champa Ram Misra (An Ordinary Member, 1912).
3. Prof. A. J. Wensinck (Recipient of Sir William Jones Medal, 1937).

The General Secretary announced the following loss of membership, since the previous meeting, by resignation:—

1. E. S. Olpadvala (An Ordinary Member, 1928).

The General Secretary announced that there had been no lapses of election, since the previous meeting, under Rule 9.

The General Secretary announced that there had been no withdrawals of application since the previous meeting.

The following paper was read:—

1. D. C. SIRCAR.—*Digvijaya of King Chandra of the Meharauli Pillar Inscription.*

An attempt has been made in this paper to prove that the *digvijaya* of King Chandra referred to in the Meharauli Pillar Inscription was performed by Chandra Gupta Maurya. Descriptions of *digvijayins*.

Conclusion: King Chandra has been identified as Chandragupta II of the Imperial Gupta dynasty.

The following exhibit was shown and commented upon:—

1. CHINTAHARAN CHAKRAVARTI.—*Manuscripts in the Society's Collections of Sanskrit Works of Maharaj Visvanath Simha of Rewa.*

Visvanath Simha (19th Century) is well known as a great patron of learning. But little is known about books written by him. The Society is in possession of manuscripts of three Sanskrit works (all on the cult of Rāma) attributed to him:—

(a) *Rāmacandrāhnikā*—a Kāvya work dealing with the story of Rāma.

(b) *Mantrārthanirṇaya*—a Tantric work which seeks to demonstrate the supremacy of the worship and mantra of Rāma and gives an esoteric meaning of the latter.

(c) Rādhāvallabhiyamataparakāśabhāṣya—a commentary on the *Vedānta-sūtra* that elucidates the views of the Rādhāvallabhiya School.

The following communication was made:—

1. M. HIDAYAT HOSAIN.—*European Physicians and Surgeons in the Moghul Court.*

When European physicians and surgeons visited India during the Moghul Rule, they were consulted in urgent cases and they were often offered State-appointments. The first European physician at the Court of Delhi was a Frenchman, M. Bernard by name. He became a great favourite of the Emperor Jahangir (1605–1627 A.D.) and was appointed to the post of Court Physician and enjoyed the honour of being invited to the Royal Table. Other Court Physicians during the Moghul Rule were:—Manonchi; Francis Bernier; Pitre de Lan; Gabriel Boughton; William Hamilton; and so on.

The Chairman announced the result of the ballot for the election of Ordinary Members and declared that all the candidates had been duly elected.



JUNE

An Ordinary Monthly Meeting of the Royal Asiatic Society of Bengal was held on Monday, the 3rd June, 1940, at 5-30 P.M.

PRESENT

THE HON'BLE MR. JUSTICE JOHN LORT-WILLIAMS, Kt., K.C., President, in the Chair.

Members:

Anderson, Mr. J.
Bose, Prof. M. M.
Chakravarti, Prof. C.
Chatterji, Prof. B. R.
Chatterji, Dr. S. K.

Dugin, Mr. L. S.
Guha, Dr. B. S.
Haq, Prof. M. M.
Majumdar, Mr. J. M.
Prashad, Dr. B.

The minutes of the last meeting were read and confirmed.

In accordance with Rule 48(d), the General Secretary reported for confirmation by the meeting the following terms adopted by the Council, since the last Ordinary Monthly Meeting:—

- (i) A bonus of Rs.1,000 was paid to the retiring Assistant Secretary Mr. J. R. Seal, in recognition of his valuable services to the Society;

- (ii) Mr. Jatis Chandra De, M.A., B.L. (Cal.), M.A. (Lond.), was appointed as Assistant Secretary to the Society with effect from 1st June, 1940, on probation for one year, on a salary of Rs.200 per month to be confirmed subsequently on a grade of Rs.200—20—500.

Order: Confirm.

The General Secretary announced the receipt of the following eighteen presentations of books, etc., which were placed on the table for inspection:—

- (1) From the Parsee Panchayet—'Yasra'.
- (2) „ the Director of Public Instruction, Poona—'Nirukta of Yaska, Vol. I'.
- (3) From Mr. B. C. Singh—'Karikavali'.
- (4) „ the Parsee Panchayet—'Nondha Ane Nukteyini'.
- (5) „ the Madras University—'Osadhikasan'.
- (6) „ Mr. B. Wilson Haigh—'Coal carbonization, etc.'.
- (7) „ B. and O. Research Society—'Bhagalpur Report'.
- (8) „ Mr. O. C. Gangoly—'Relation between India and Indonesian Culture'.
- (9) From the Travancore University—'Proc. and Transac. of the 9th All-India Oriental Conference', Trivandrum.
- (10-15) From the Parsee Panchayet—'Writings of G. K. Nariman', 'Identification and description of some old sites in Sind', 'Settlements in the lower Indus Basin', 'Rubaiyat-i-Baha Tahir, etc.', 'Religion of the Zarathushtra,' and 'Studies in Indo-Muslim History'.
- (16) From Prince of Wales' Museum, Bombay—'Report for 1938-39'.
- (17) „ Mr. M. W. Chiplonkar—'Distribution of temperature in the lower stratosphere'.
- (18) From the Director, Calcutta School of Tropical Medicine—'The Library Catalogue, Calcutta Section of Tropical Medicines'.

The following candidates were ballotted for for election as Ordinary Members:—

(28) *Poleman, Horace Irvin*, B.A., M.A., Ph.D., Director of Indie Studies, Library of Congress, Washington, D.C., U.S.A.

Proposer: B. S. Guha.

Seconder: M. Hidayat Hosain.

(29) *Seal, John Robert*, M.B.E., Accountant, Asst. Secretary, R.A.S.B., 1, Park Street, Calcutta.

Proposer: B. S. Guha.

Seconder: M. Hidayat Hosain.

(30) *De, Jatis Chandra*, M.A., B.L. (Cal.), M.A. (Lond.), Colonial Educational Service, 11, Ray Street, Elgin Road P.O., Calcutta.

Proposer: B. S. Guha.

Seconder: M. Hidayat Hosain.

The General Secretary reported that an application for Institutional membership had been received from—

The Nepal Museum, Kathmandu, Nepal
which had been accepted by Council.

The General Secretary announced that there had been no loss of membership, since the previous meeting, by death.

The Chairman called upon Prof. Chintaharan Chakravarti to read an obituary notice on the late Prof. Amulya Charan Vidyabhusana (see page 191).

The Chairman called upon Prof. Chintaharan Chakravarti to read an obituary notice on the late Mr. N. N. Vasu (see page 192).

The General Secretary announced that (a) there had been no loss of membership since the previous meeting by resignation; (b) there had been no lapses of election since the previous meeting under Rule 9; and (c) there had been no withdrawals of application since the previous meeting.

The following papers were read:—

1. JATINDRA MOHAN DATTA.—*Sedentary Games—Proposed Nomenclature of its Points.*

The author finds fault with the usual method adopted in the description of various sedentary games by diagrams with indications on them. He suggests a new method which is fully described.

2. W. J. CULSHAW.—*Some Notes on Bongaism.*

Among the Santals there is no evidence to show that they either now or in the past have held beliefs which would justify us in maintaining that the word 'bonga' can mean an impersonal and all-pervading power. Pantheistic notions among present-day Santals are a late accretion due to Hindu influence, and are in no way reflected in their customary practices and beliefs. It would seem that we must look elsewhere than in their 'Bongaism' for traces of a conception analogous to 'Mana'.

The following communications were made:—

1. M. HIDAYAT HOSAIN.—*A note on the Ruins of Masjidkur and Amadi.*

The material for this note was collected by the author during a short visit paid by him to this part of the province some time ago. It gives an account of twelve Moslem Saints who, 500 years back, lived in Khulna and Jessore, and built beautiful mosques at several places. The chief of this saintly order was Ulugh Khān Jahān; a staunch warrior-saint who flourished during the reign of Naṣir-ud-Dīn Maḥmūd Shāh, an independent king of Bengal (1442–1459 A.D.). The famous mosque of Sāthgumbaz at Bagerhat had been built by him. According to the epitaph on his tomb, he died at Bagerhat on the 26th Dhī'l Hijja, 863 A.H., the 23rd October, 1459 A.D.

2. JATIS CHANDRA DE.—*Pearls and the East India Company (1600 to 1661).*

Ever since the date of 'Grevil's' report—a document connected with the genesis of the Company—the East India Traders had become interested in pearls. Later on, it was felt that without the bestowal of presents it was impossible to develop commercial relationship with the East. 'Presents must be given, else there would be noe livinge among these people,' because if the men in power 'were pleased, the crie of a million of subjects would not be heard'. Therefore among various presents of the period which included 'spitting potts', 'lusty mastives' and 'young lions from Turkey' good pearls came to occupy a prominent place. Pearls were of various kinds ranging from the 'seed' ones to those which were of extraordinary size. 'Pearles (were) esteemed rather by their greatness than their bewty.' Pearls were however not only important as presents, but were also considered to be profitable merchandise. Bickley's fleet brought a pearl which was sold for 5,000 rupees, the transaction apparently resulting in a profit of 33% on the original outlay. 'Those not overbought (would) yeald proffitt and readye monye to the valew of 10,000*l.* Sterling for one yeare, provided they (were) perfect and orientall.'

Again their utility as securities to borrow money on is also emphasized by the documents, though sometimes the Company was cheated in 'pawnes of pearles'. They came from Indo-Ceylonese and Persian waters as well from elsewhere, and were obtained chiefly by purchase, privateering and smuggling.

The Chairman announced the result of the ballot for election of the Ordinary Members and declared that all the candidates had been duly elected.

JULY

An Ordinary Monthly Meeting of the Royal Asiatic Society of Bengal was held on Monday, the 1st July, 1940, at 5-30 P.M.

PRESENT

MAJOR HENRY HOBBS, V.D., Ordinary Member, in the Chair.

Members :

Anderson, Mr. J.
Bose, Prof. M. M.
Cleghorn, Miss M. L.
De, Mr. J. C.

Ghatak, Prof. J. C.
Griffiths, Dr. W. G.
Guha, Dr. B. S.
Rahman, Prof. S. K.

Visitors :

Bose, Mr. Sudhir Kumar.

Guha, Mrs. Uma.

Majumdar, Mr. D. N.

The minutes of the last meeting were read and confirmed.

The General Secretary reported receipt of the following eighteen presentations of books, etc., which had been placed on the table for inspection:—

(1) From the Consul-General for France—'Documents Diplomatiques Francais, Ser. 1, Tom 9'.

(2-9) From Archaeological Survey, Frontier Circle, Lahore—'Annual Progress Reports for years 1905 to 1910, 1913 and 1920'.

(10-11) From Prof. N. Roerich—'Reprints of articles contributed by Roerich to several periodicals', 'Nicholas Roerich'.

(12) From Mysore Geological Department—'Archaeon Complex of Mysore'.

(13) From Dr. B. R. Chatterji—'Recent advances in Kambuja Studies'.

(14-17) From Government of India—'Proc. Indian Historical Records Commission, Vols. 4, 5, 6' and 'Vol. 16'.

(18) From Pandit Bisweswarnath Rau—'Marwar ka Itihas, Vol. I'.

The following candidates were ballotted for for election as Ordinary Members:—

(31) *Sri Jagannath*, Officer, Indian State Rlys., Suite No. 12A, 53, Chowringhee Road, Calcutta.

Proposer : J. C. De.

Seconder : B. S. Guha.

(32) *Dutt, Sudhir Chunder*, Capt., M.B., A.I.R.O., Ophthalmic Surgeon, Mayo Hospital, 214, Lower Circular Road, Calcutta.

Proposer : J. C. De.

Seconder : B. S. Guha.

(33) *Chatterjee, A. B.*, M.A., General Manager, Metropolitan Printing & Publishing House Ltd., 4-B, Council House Street, Calcutta.

Proposer : J. C. De.

Seconder : M. Hidayat Hosain.

(34) *Ghosh, Ratneswar*, Merchant and Manufacturer, 12/2, Circular Garden Reach Road, Kidderpore, Calcutta.

Proposer : J. C. De.

Seconder : B. S. Guha.

(35) *Ray, Sukumar*, Professor of History, H. G. College, Munshiganj, Dacca.

Proposer : J. C. De.

Seconder : M. Hidayat Hosain.

• The General Secretary announced that (a) there had been no loss of membership since the previous meeting either by death or by resignation; (b) there had been no lapses of election

since the previous meeting under Rule 9; and (c) there had been no withdrawals of application since the previous meeting.

In accordance with Rule 48(a), the General Secretary announced that the Council, since the last Ordinary Meeting, had passed the following emendation of certain Regulations regarding the Election of Fellows:—

The following Regulations, after amendment, would read as:—

1. The General Secretary of the Royal Asiatic Society of Bengal for the time being shall be ex-officio Secretary, and Convener to the body of Fellows and serve as the channel of communication between that body and the Council of the Society. In his capacity as General Secretary he shall attend, and act as Secretary to, the meetings of Fellows prescribed in the Regulations, but shall not participate in discussions or vote unless he be a Fellow.

At any meeting of the Fellows the Senior Fellow present shall take the Chair.

2. There shall be a meeting of Fellows in June, before the issue of blank nomination papers, one week's notice of which shall be given to the Resident Fellows. At this meeting such recommendations or matters of concern to the Fellows, of which previous notice has been received by the General Secretary, shall generally be considered.

6. Each candidate shall be nominated by at least two Fellows, one at least of whom shall certify that he is personally acquainted with the scientific or literary work, as the case may be, of the candidate he proposes and is in a position from his personal knowledge to express an opinion on its value, and shall set out in detail the qualifications of the candidate, including detailed references to his most important published original papers, stating date and place of publications, and in case of publication in a serial, the name and the volume number of the latter.

The tenure of any Office on the Council of the Society shall not be considered a qualification.

Each candidate shall also be supported by at least two other Fellows.

8. There shall be a meeting of Fellows within the fortnight preceding the 7th of October, one week's notice of which shall be given to the Resident Fellows. At this meeting matters of concern to the Fellows of which previous notice has been received by the General Secretary, shall generally be considered and the nomination papers so returned shall be scrutinized, and the General Secretary shall be requested to issue the voting papers as provided in Regulation 10.

10. A list of the persons duly nominated, and supported, with their qualifications, shall be compiled from the nomination papers by the General Secretary, printed as a voting paper, and sent out to each Fellow not later than the 1st of November. The number of vacancies shall be stated on the voting paper.

13. There shall be a meeting of Fellows in the second week in January, one week's notice of which shall be given to the Resident Fellows. At this meeting the sealed envelopes mentioned in Regulation 12 shall be opened, and the voting papers counted as the Chairman directs, and the names of such candidates as receive at least three-fourths of the votes of the Fellows voting shall be placed before the meeting. The meeting shall also be competent generally to consider matters of concern to the Fellows of which previous notice had been given.

14. In the event of a tie for any of the vacancies, the Fellows present at the meeting shall decide by ballot which of the candidates receiving the same number of votes shall be selected for recommendation to the Council for election.

The following papers were read:—

1. D. N. MAJUMDAR.—*Some Aspects of the Cultural Life of the Khasas of cis-Himalayan Region.*

The Khasas of Jaunsar Bawar are a polyandrous people. Jaunsar Bawar is included in the Chakrata sub-division of the Dehra Dun district in the United Provinces. To the north and east of Jaunsar Bawar lie the state of Tehri, to the east Jubal and Sirmur states, and to the south the Dun valley. The whole of this area is rugged and full of precipitous mountains with little level ground. There is ample evidence of the physical similarity of the Khasas with the Kasmiris, and the Khasa family law resembles the Punjab customary law particularly that of the Kangra hills. The Khasas have occupied these hills perhaps long before the Christian era and references to them are found in the Br̥hat Saṁhitā, the Viṣṇu and Vāyu Purāṇas, Hari Vaṁśa and the Mahābhārata. They represent, most probably the easternmost outpost of Indo-Aryan penetration in the cis-Himalayan region. The social organization in Jaunsar Bawar is characterized by a dual organization of economic classes, viz. the zemindars and the artisans. The latter are mostly recruited from the aboriginal substratum perhaps of 'Austrie' speaking stock. At the lowest scale of the economic ladder lies the domestic drudge, called Kolta, who is the hereditary hewer of wood and drawer of water. Then come the other artisan classes, such as bajgirs (musicians), oads (carpenters), lohārs, chamārs, barbers and others. The Rajputs and Brahmins form as it were, a top dressing on the aboriginal base. Religious life of the Khasas is a curious blend of Hindu and tribal beliefs and practices and though they own allegiance to Hindu divinities their partiality to ancestral spirits, queer and fantastic demons and gods, stones, weapons and various symbols, is rather phenomenal. The Khasas are a patriarchal people living in a joint family under the authority of the eldest brother. The polyandry of the Khasas is also of the fraternal type as several brothers share one wife with a conventional code of rights and obligations. Physiological fatherhood may not be recognized by the Khasas but they appear to have developed a functional fatherhood in which the kinship term for father is qualified by the rôle or function of the group of fathers in domestic economy. There is a disparity in the distribution of the sexes and the fertility of women has considerably fallen in recent years; the proportion of the male children is greatly in excess of females and the attitude of the Khasas towards this problem has been carefully analyzed. The functional analysis of the group morals and customs connected with polyandry leads to the irresistible conclusion that the cis-Himalayan region is characterized by an impact of two distinct matrices, one matriarchal represented by the Domas or the aboriginal substratum and the other patri-

archa¹ represented by the Khasas. It is true that the peculiar economic conditions of the hill people and the biological factor of sex disparity where it exists, have no doubt largely determined the form and functions of the traits-complex, but had it not been for the matriarchal matrix, the polyandry of the Himalayan region would not have assumed the importance it possesses.

2. J. C. DE.—*The Indian Theatre of Anglo-Dutch Competition* (1600–1652).

India was only one of the many regions in which Anglo-Dutch rivalry became manifest. At Surat efforts of the Dutch to establish a factory were stoutly opposed, and Roe referred to their ‘insufferable insolencies’. Communications of other Englishmen also throw light on this point. Then came the Amboyna tragedy and English factors in India became deeply agitated. No energetic retaliatory measures were, however, adopted and on one occasion the then king of England released three Dutch vessels which he had impulsively seized (probably) on payment of £30,000. The Portuguese menace, however, in spite of all heartburnings drew the two European nations together, and Anglo-Dutch navies fought the common foe on several occasions. No permanent co-ordination of interests, however, followed, and over a scheme of fortifying Bombay, for example, the allies fell out. English trade at Masulipatam ‘lieth there also on bleeding’. Spices and specie of which they had abundant supplies enabled the Dutch to take the lead. But the Dutch progress terrified the Portuguese who were gradually thrown into the arms of the English. The Dutch, however, went on pursuing their policy of commercial monopoly vigorously, and not even the Royal Flag of England could protect a vessel against Dutch privateering. To all the various causes of conflict in the East were added those in the West and war was formally declared in 1652.

3. NANIMADHAB CHAUDHURI.—‘*Cult of the Old Lady*’.

An investigation into folk cults prevalent in Bengal and for the matter of that in different parts of India reveals how the Hindu and the tribal religions have behaved towards each other. It has been a policy of give and take. Hindu deities have been *tribalized* and there are many instances of orthodox members of the Hindu pantheon losing their position and even caste gradually as their worship spread among the tribes; while many tribal deities have been *Hinduized* and sometimes *Brahminized* and accepted as forms of some or other of the great deities. The paper deals with the cult of such a tribal deity prevailing in parts of North Bengal. This cult of the *Burī* or the Old Lady combines with the worship proper a *Jāt* or festival which contains two important features, namely, dancing with dressed up

bamboo poles, and dancing with lighted torches tied to the ends of iron rods passed through the tongues, arms, palms, etc., of the votaries. An analysis of the cult shows how a tribal clan deity who continues to be offered worship in the original form has come to be Brahminized as *Vrddheśvari*, affiliated to the Devī and worshipped in the Brahminical form and to incorporate into it in course of time rites borrowed from the old Chaitra festivals and important elements of an old fertility cult.

4. A. AIYAPPAN.—*Śiva-Seal of Mohenjo-Daro.*

The figure in yogic pose on a low stool, with its arms outstretched and hands placed on the knees and with the head adorned by a pair of horns, which is found engraved on several seals excavated from Mohenjo-Daro, has been tentatively identified by Sir John Marshall with that of Śiva-Paśupati, taking into consideration the attributes of Śiva, such as, the trident-like head-dress, the yogic pose, the erect *membrum virile* and the numerous animals associated with him. Dr. Saletoré has objected to this identification on the grounds that: (1) the Śiva-linga cult is of post-Mahābhārata date, (2) the Mohenjo-Daro figure is two-eyed or possibly three-eyed, while Śiva is three-eyed, (3) Śiva's trident is in his hands and not on the head, and (4) the horns of the trident-like head-dress are not the speciality of a pre-Aryan deity, because the Vedic God, Agni, also has horns. He has therefore identified it with Agni.

In this article, the author has made an attempt to prove that the figure on the seals is 'nearer Śiva than Agni or even Rudra'. His view is supported by a study of Proto-neolithic cultures and by ethnological, archaeological and sculptural evidences.

The Chairman announced the result of the ballot for the election of the Ordinary Members and declared that all the candidates had been duly elected.

AUGUST

An Ordinary Monthly Meeting of the Royal Asiatic Society of Bengal was held on Monday, the 5th August, 1940, at 5-30 P.M.

PRESENT

DR. S. K. CHATTERJI, M.A., D.Lit., F.R.A.S.B., Philological Secretary, in the Chair.

Members :

Anderson, Mr. J.
 Bagchi, Mr. K. N.
 Biswas, Dr. K.
 Chakravarti, Prof. C.
 Cleghorn, Miss M. L. C.
 De, Mr. J. C.
 Ghatak, Prof. J. C.
 Ghoshal, Dr. U. N.
 Ghuznavi, Mr. I. S. K.

Griffiths, Dr. W. G.
 Guha, Dr. B. S.
 Haq, Prof. M. M.
 Hobbs, Major H.
 Hosain, Dr. M. H.
 Majumdar, Mr. J.
 Prashad, Dr. Baini
 Rahman, Prof. S. K.
 Rossetti, Mr. F. F.

Visitors :

Ahmed, Mr. S.

Judd, Rev. H. P.

The minutes of the last meeting were read and confirmed.

The General Secretary announced receipt of the following twelve presentations of books, etc., which had been placed on the table for inspection:—

- (1) From the Trustees of the Gibb Memorial—'New Series publication No. XIV'.
- (2-3) From Mr. F. Wolf—'Glossar zu Firdosis Shahnama' and 'Supplement to the Glossar zu firdosis Shahnama'.
- (4) From Dept. of History and Antiquarian, Assam—'Account of Assam'.
- (5) From University of Pennsylvania—'Sanskrit Indeclinables, etc.'.
- (6) „ Govt. Oriental Library, Mysore—'Advaita siddhi, etc., Vol. 3'.
- (7) From University of Madras—'Slokavartika-Vyakhya-Tatparya'.
- (8-12) From Madras Government—'Descriptive Catalogue of Kanarese MSS.', 'Descriptive Catal. of Tamil MSS.', Vol. 5', 'Descriptive Catal. of Telegu MSS., Vol. 7', 'Triennial Catal. of MSS., Vol. II', and 'Descriptive Catal. of Kanada MSS.'.

The following candidates were ballotted for for election as Ordinary Members:—

(36) *Husain, Dr. Mahdi*, Lecturer in History and Politics, Agra College, Agra.

Proposer: J. C. De.

Seconder: M. Hidayat Hosain.

(37) *Kamungo, Nityanand*, Ex-Minister, Orissa, Bakrabad, Cuttack.

Proposer: J. C. De.

Seconder: B. S. Guha.

(38) *Chatterjee Sastri, Kshitish Chandra*, M.A., Lecturer, Calcutta University; 81, Shambazar Street, Calcutta.

Proposer: J. C. De.

Seconder: B. S. Guha.

The General Secretary announced the following loss of membership since the previous meeting by resignation:—

- (4) A. L. Coulson (An Ordinary Member, 1933).
- (5) A. A. Bake (An Ordinary Member, 1927).

The General Secretary announced the following lapses of election since the previous meeting under Rule 9:—

- (1) Jogesh Ch. Mukerji (Elected on 5-2-40).
- (2) Syamakanta Dutt (Elected on 4-3-40).

The General Secretary announced that there had been no withdrawals of application since the previous meeting.

The following papers were read:—

1. R. RAKSHPAL.—*Post-Embryonic Development of the Respiratory System of Dialeurodes eugeniae Maskell (Homoptera, Aleurodidae) together with preliminary Observations regarding the Mechanism of Respiration in the different Instars.*

Introduction. Development of the respiratory system of *Dialeurodes eugeniae* Maskell:—Spiracles; the tracheae and tracheoles; general conclusions regarding the tracheal system; development of the breathing-folds; functions of the breathing-folds; mechanism of respiration. Development of the respiratory system of *Aleurodes* sp. Material and technique. Acknowledgements. References.

2. N. K. BHATTASALI.—*An Inquiry into the Origin of the City of Dacca.*

This paper reveals the strange fact that the city of Dacca had no ceremonial foundation but grew up of itself. 'No one came here with the intention of founding a city and none set about busily to do so. This sounds somewhat mystifying'. The author attempts 'to clear up the mystery'.

3. E. O. MURRAY.—*Ancient Workers of Western Dhalbhum.*

In this paper the author, Mr. E. O. Murray, a Mining Engineer, gives an interesting account of the Copper Mine working of the ancient people of the western Dhalbhum pergunah, in the district of Singhbhum, in Bihar. Remains of the ancient copper workers are numerous in the shape of countless working dumps and slag heaps testifying to their industry. Slag heaps and the remains of old clay furnaces lie all around and testify to a considerable output of copper at these points. The process of smelting was more or less the same as at present day, air being supplied by foot-worked leather bellows to clay furnaces about three feet high.

Plenty of Palaeolithic and Neolithic implements in the shape of bouchers, celts, flat stone axes, ringed hammer-stones, cores and flakes have been found round about the places of Banabassa, Bonidi and Kundrukocha. Monolithic monuments and burial urns of clay and in some cases with bones and skulls have also been found from some of the places.

Amongst the other interesting finds the following have been found:—

- (1) Broken pieces of pottery of cylindrical shape.
- (2) A considerable quantity of beads of devitrified glass of various shapes and sizes, of polished stone, of blue, green and yellow glass, of agate, jasper, topaz and carnelian resembling curiously enough to Mohenjo-Daro and Harappa and to some of the common forms of Neolithic beads in both Europe and Asia found from an area which extended to more than 3 miles.
- (3) Terra-cotta beads of brick-red colour of various shapes and sizes. All the beads either of stone, glass and terra-cotta have holes which have been drilled for threading.
- (4) One bead of white glass overlaid with beaten gold stuck to it by lac.
- (5) Some shrine-like structures with panel decorations and carvings in the interior of the buildings.
- (6) Some punch-marked coins bearing resemblance to those of the Kushan period.

The following communications were made:—

1. M. HIDAYAT HOSAIN.—*A note on a very rare and richly ornamented Manuscript called CHINGIZ NAMA.*

After the description of the MS. which contains altogether 112 paintings of delicate and highly finished style, Dr. Hosain described some of the most interesting photos which have been taken from the original MSS. preserved in the Bankipore Library. Among these photos there is one which shows the birth of the Emperor Akbar in the castle of Amarkot—the mother (Hamida Banu Begam) dressed in green robe is lying exhausted on a couch and the baby Akbar is seen in the arms of a nurse with a high Tartar cap. There is a general rejoicing in the harem and the women are seen in exultation over the birth. In the lower part of the illustration there is a picture of Tardi Beg Khan bringing the news to Emperor Humayun who was encamped about 15 *kos* from Amarkot. It is a very striking picture of the birth of Akbar.

2. BAINI PRASHAD.—*Buildings of Humayun.*

It was resolved on a motion from the Chair that both the communications be published *in extenso* in the Journal.

The Chairman announced the result of the ballot for the election of the Ordinary Members and declared that all the candidates had been duly elected.



NOVEMBER

An Ordinary Monthly Meeting of the Royal Asiatic Society of Bengal was held on Monday, the 4th November, 1940, at 5-30 P.M.

PRESENT

DR. MEGHNAD SAHA, D.Sc., F.R.S., F.N.I., F.R.A.S.B.,
Natural History (Physical Science) Secretary, in the Chair.

Members :

Anderson, Mr. J.	De, Mr. J. C.
Bose, Mr. M. M.	Ghose, Mr. P. K.
Brown, Mr. Percy	Hobbs, Major H.
Bruce, Mr. A. E. R.	Hora, Dr. S. L.
Cleghorn, Miss M. L. C.	Prashad, Dr. Raini

Visitors :

Cleghorn, Miss O.	Ewing, Mr. G.
	Isch-Wall, Mr. C.

The minutes of the last meeting were read and confirmed.

The General Secretary reported receipt of the following seventy-two presentations of books, etc., which had been placed on the table for inspection :—

(1-2) From Dr. B. C. Law—‘Buddhist Conception of Spirits’, and ‘Mahavira, His Life and Teachings’.

(3) From Govt. of Bengal—‘Diptera, Vol. VI’.

(4) „ Dr. B. C. Law—‘D. R. Bhandarkar Volume’.

(5) „ University of Southern California—‘Morphology of the Tibetan Language’.

(6) From University Press, Bombay—‘Shah Abdul Latif of Bhit’.

(7-27) From Chhotelal Jain, Esq.—‘Times’ History of the War in 21 Vols.’

(28-33) From Dr. B. C. Law—‘Minor Anthologus of Pali Canon’, ‘Ancient Indian Tribes, Vol. 2’, ‘Geographical Essays, Vol. 1’, ‘Historical Gleanings’, ‘Some Kshatriya Tribes of Ancient India’, ‘Life and Work of Buddhaghosa’.

(34-38) From Vijaya Dharma Suri—‘What the Historians say about the Saraks’, ‘Discourses’, ‘Heritage of the last Arhat’, ‘Kaleidoscope of Indian Wisdom’, ‘Interpretation of Jain Ethics’.

(39) From Sir J. G. Frazer—‘Lectures on the Early History of Kingship’.

(40) From Indian Science Congress Association—‘Proceedings, 26th Session’, Lahore.

(41) From Calcutta University—‘Some Makers of English Law’.

(42) „ Seth Jugal Kishore Birla—‘Hindu America’.

(43-44) From Govt. of India—‘Hakluyt Society, 2nd series, lxxxiii, Vols. 1 and 2’.

(45-46) From Royal Asiatic Society of Bengal—‘Doctrine of Nimbarka’, Vol. 1 and ‘Dictionary of the Lushai Language’.

(47) From Elizabeth Sharpe—‘Thakore Sahib Shri Sir Daulat Singh of Limbdi’.

(48) From the Archaeological Survey of India—‘Catalogue of pre-historic Antiquities in the Indian Museum’.

(46) From P. Baldaeus—'A true and exact description of the most celebrated East India coasts of Malabar and Coromandel'.

(50) From Archaeological Survey of India—'Bombay-Karnatak Inscription'.

(51-52) From the Trustees, British Museum—'Fossil Orthoptera, etc.'

(53) From Govt. Central Press, Bombay—'Selections from C. W. Malet's Letter-Book, 1780-84'.

(54) From Madras Government—'A triennial Catalogue MSS. of Govt. Oriental MSS. Library, Vol. 7, part 2'.

(55) From Dr. B. C. Law—'Gautam Buddha'.

(56) .. Bhandarkar Oriental Research Institute—'Mahabharata fasc. 10'.

(57-58) From Dr. B. C. Law—'Buddha Ramani', 'Lichhavi Jati'.

(59) From Madras Govt.—'Author Index of Sanskrit MSS. in Govt. Oriental MSS. Library'.

(60-72) From Vijaya Dharma Suri—'Subhasita Padma ratnakara, vols. 2-5', 'Arhud Prachin Jaina Lekhamandoha', 'Jaina Sapta-padarthi', 'Balabodhini-parikamita', 'Himensu Vijaya-Jina-Lekha', 'Suriswar Aney Samrat', 'Prachin Bharatavarsa Num Sinhablochana', 'Sanskrit-Prachin-staban-Sandohae, Hemchandra vacananubha' and 'Abu'.

The following candidates were elected Ordinary Members by the Council, during the recess months, under Rule 7:—

(39) *Ghosh, Prashana Kumar*, Visiting Physician, Carmichael Medical College Hospital, Belgachia, Calcutta, P.7/1, Chittaranjan Avenue, P.O. Beadon Street, Calcutta.

Proposer: J. C. De.

Seconder: B. S. Guha.

(40) *Judd, The Revd. Henry Pomeroy*, Clerk-in-Holy Orders, (St. James' Church), 165, Lower Circular Road, Calcutta.

Proposer: B. S. Guha.

Seconder: J. C. De.

(41) *Chatterji, Bankim Chandra*, M.Sc., (Gold Medalist), Member of the Calcutta Mathematical Society, Research Scholar, Calcutta University, P. 23B, Nepal Bhattacharya 1st Lane, Kalighat, Calcutta.

Proposer: J. C. De.

Seconder: B. S. Guha.

(42) *Mayley, Thomas Theodore Steiger*, I.C.S., F.R.A.I., B.A. (Cantab. and Oxon.), Assistant Commissioner, Shillong, Assam.

Proposer: J. P. Mills.

Seconder: B. S. Guha.

(43) *Mukerji, Nirod Prosad*, M.Sc. (Cal.), Ph.D. (Lond.), Research Fellow, Teachers' Training Dept., Calcutta University, 1/5, Fern Road, Ballygunge, Calcutta.

Proposer: J. C. De.

Seconder: B. S. Guha.

(44) *Habibullah, A. B. M.*, M.A. (Cal.), Ph.D. (Lond.), Dip. Lib. (Lond.), Lecturer Islamic History & Culture, Calcutta University, 4, Hyat Khan Lane, Calcutta.

Proposer: M. Hidayat Khan.

Seconder: J. C. De.

The General Secretary reported the following loss of membership, since the previous meeting by death.

1. Sir E. Denison Ross (Ordinary Member, 1901; Ordinary Fellow, 1910).
2. J. R. Asari (Ordinary Member, 1937).

Members standing passed resolution of condolence.

The General Secretary announced that since the previous meeting: (a) there had been no loss of membership by resignation (b) there had been no lapses of election under Rule 9; and (c) there had been no withdrawals of application.

The following papers were read:—

1. B. S. GOGATE.—*On Trematodes Collected in Pilibhit (North India).*

This paper is a description of a number of species of Trematodes Parasites collected in the Pilibhit district of the United Provinces.

2. M. E. GORDON and D. H. GORDON.—*Survivals of the Indus Valley.*

The authors indicate several survivals of the Harappa and Jhukar Cultures of the Indus Valley over to the early Historic Period from the beginning of the Gupta's, i.e., 322 B.C. to C. 500 A.D. At the same time they put forward their views, based on objects discovered from the area, in reference to the apparent cultural hiatus of approximately two thousand years.

3. S. L. HORA and J. N. RUDRA.—*On Catfish Spines embedded in the Mesentery of Ophicephalus punctatus Bloch.*

The presence of pectoral spines of *Mystus gulio* (Hamilton) in the mesentery of *Ophicephalus punctatus* Bloch is recorded, and attention is directed to the earlier records of foreign bodies embedded in the tissues of fishes. An explanation as to how the spines became lodged in the mesentery is given, and reference is made to certain relevant features in the ecology and bionomics of the two species concerned.

4. SIE AUREL STEIN.—*Notes on the Life and Labours of Captain Anthony Troyer.*

Captain Anthony Troyer after several years' distinguished service in the Indian Army and as Secretary to the Government Sanskrit College, Calcutta, retired to Paris in 1835. In 1840 he published a French translation and the Sanskrit text of the first six cantos of the Chronicle of Kalhana's *Rajatarangini*.

Twelve years later he completed the work by translating the remaining two cantos. In this communication, the author gives an account of the life and labours of this interesting personality who continued to pursue his scholarly labours till 1865 when he died at the age of 90 years. He was described by the distinguished French orientologist Mohl as a man wholly indifferent to fame and content to satisfy his interest in study for its own sake. Troyer also completed an English translation of *Dabistan* or *School of Manners* from an incomplete manuscript left by David Shea: this was published on behalf of the Oriental Translation Committee in 1845. The account of the life and work of Captain Troyer communicated to the Society is based on an obituary notice by Mohl and on enquiries carried out by Col. Phillimore.

5. C. P. S. MENON.—*The Magic Cakras and Rectilinear Orbits in Ancient Astronomy.*

From his detailed studies the author concludes that the ancient astronomers who were engaged in observing the Sun and the stars and measuring the shadows learnt to assign rectilinear orbits to the celestial bodies. This plan fitted in with their system of measurements based on square scales, and with their general scheme of things including their conceptions like the Universe based on the square form and their appliances like the gnomon and the Sundial. From an evolutionary standpoint the square appears to have given place to the circle, the intermediate stages being marked by the pentagon, hexagon, octagon, etc. While the solar orbit and the zodiac were conceived as squares in the beginning these earlier astronomers soon learnt to differentiate between the forms of the orbits of the various planets. These realities of the Universe were, however, treasured as secrets and gave rise to various symbols of mysticism, occultism and art, and survived in astrology, alchemy, the Kabbala, and in rites of religion and magic.



DECEMBER

An Ordinary Monthly Meeting of the Royal Asiatic Society of Bengal was held on Monday, the 2nd December, 1940, at 5-30 P.M.

PRESENT

DR. S. L. HORA, D.Sc., F.Z.S., F.N.I., F.R.S.E., F.R.A.S.B.;
Ordinary Member, in the Chair.

Members :

Agharkar, Dr. S. P.
 Biswas, Dr. K. P.
 Bose, Mr. S. M.
 Bruce, Mr. A. E. R.
 Chakravarti, Prof. C.
 Chatterjee, Mr. B. C.
 De, Mr. J. C.
 Ghosh, Mr. P. K.

Griffiths, Dr. W. G.
 Guha, Dr. B. S.
 Hobbs, Major H.
 Hosain, Dr. M. H.
 Jain, Mr. C. L.
 Macfarlane, Mrs. E. W. F.
 Meyer, Miss S.
 Pasricha, Major C. L.

Rossetti, Mr. F. F.

Visitors :

Graig, Mr. D.
 Herre, Prof. Albert, W. C. T.
 Job, Mr. T. J.
 Law, Mr. N. C.

Mookerjee, Mr. S. K.
 Roonwal, Mr. M. L.
 Row, Dr. H. S.
 Tinbechi, Mr. B. P.

Waig, Mr. C.

The minutes of the last meeting were read and confirmed.

The General Secretary announced receipt of the following ten presentations of books, etc., which had been kept on the table for inspection:—

- (1) From Kanhaylal Mathur—'Kavita Sangraha in Hindi'.
- (2) „ Dr. B. C. Law—'Holy Places of India'.
- (3) „ the Archaeological Survey—'Catalogue Central Archaeological Library'.
- (4) „ the Madras University—'Administration and Social Life under Vijayanagar'.
- (5) From Government Central Press, Bombay—'Poona Residency Correspondence, Vol. 7'.
- (6) From the Calcutta University—'Santal Insurrection, 1855 to 1857'.
- (7) From Kalikinkar Dutta, Esq.—'Santal Insurrection, 1855 to 1857'.
- (8) From Dr. U. N. Ghoshal—'Travels of Tibetan Pilgrims in the Sant Valley'.
- (9) From the Madras Government—'Descriptive Catalogue of Islamic MSS. in Government Oriental MSS. Library, Vol. 1'.
- (10) From Maulavi H. S. Ata Hosain—'Hazairul Quds, etc.'.

The following candidates were ballotted for election as Ordinary Members:—

(45) *Hodgson, Lionel Leonard*, Secretary and Treasurer, British and Foreign Bible Society (Calcutta Aux.), Bible House, 23, Chowringhee Road, Calcutta.

Proposer: Baini Prashad.

Seconder: M. Hidayat Hosain.

(46) *Jalan, Mohanlal*, Landlord, 61, Harrison Road, Calcutta.

Proposer: Baini Prashad.

Seconder: J. C. De.

(47) *Sāhityabhushana, Pandit Kedernath*, Editor of *Kāvyamālā*, Court Raj Pandit, Raj Jyotishi, Incharge Maharaja's Astrological Observatory, Sanghi ji ka Rasta, Jaipur City, Rajputana.

Proposer: Baini Prashad.

Seconder: J. C. De.

(48) *Geng., George Radcliffe*, Journalist, Spence's Hotel, Calcutta.

Proposer: Baini Prashad.

Seconder: A. F. R. Bruce.

(49) *Isch-Wall, Claude*, Licencié-es-Science (Mathématiques et Physiques) Lieutenant British Army, Fort William, Calcutta.

Proposer: A. E. R. Bruce.

Seconder: Baini Prashad.

(50) *Edgley, Hon'ble Mr. Justice Norman George Armstrong*, Puisne Judge, Calcutta High Court, 9/1, Middleton Street, Calcutta.

Proposer: L. R. Fawcus.

Seconder: M. Hidayat Hosain.

(51) *Rahman, A. F. M. Khalilur*, B.A. Hons. (Lond.), Ph.D. (Lond.), Professor of History (B.E.S.), Presidency College, College Street, Calcutta.

Proposer: M. Mahfuz-ul Haq.

Seconder: U. N. Ghoshal.

The General Secretary announced the following loss of membership, since the previous meeting, by death:—

- 1. Sir Joseph John Thomson (Honorary Fellow, 1915).

The General Secretary reported the following loss of membership, since the previous meeting, by resignation:—

1. E. C. Flury (Ordinary Member, 1936).
2. Hemraj Raj Guru (Ordinary Member, 1919).
3. J. C. White (Ordinary Member, 1936).
4. J. A. Dunn (Ordinary Member, 1929).

The General Secretary announced that since the previous meeting: (a) there had been no lapses of election under Rule 9, and (b) there had been no withdrawals of application.

The General Secretary reported that in accordance with Rules 37 and 38, the names of the following six ordinary members would be suspended as defaulters within the Society's building for the period of a month, to be removed from the Society's registers for non-payment unless the amount due be paid before the next Ordinary Monthly Meeting:—

1. M. L. Bhatia	due	..	Rs.	70
2. P. L. Jaitly	"	..	"	88
3. H. C. Mandhata	"	..	"	78
4. Abinash Ch. Ray	"	..	"	90
5. Raja Kshitindra Deb Rai Mahasai	"	..	"	108
6. Mukul Dey	"	..	"	135

In accordance with Rule 40, the General Secretary reported the names of the following ten Ordinary Members had now been removed from the member-list of the Society:—

- | | |
|--------------------------|------------------------|
| 1. G. W. Douglas. | 6. Major R. L. Vance. |
| 2. Otto Eberl. | 7. R. M. Statham. |
| 3. R. S. Finlow. | 8. Capt. G. L. Mallam. |
| 4. Major D. E. C. Kenny. | 9. O. G. Matthias. |
| 5. H. W. Lyne. | 10. S. C. Chakravarti. |

In accordance with Rule 40, the General Secretary reported that the names of the following eleven Ordinary Members would be removed from the next member-list of the Society:—

- | | |
|------------------------------|---------------------------|
| 1. Rai Bahadur S. K. Bhuyan. | 7. Major M. F. C. Martin. |
| 2. P. N. Banerjee. | 8. Herbert Richter. |
| 3. C. C. Caldar. | 9. Jaipal Singh. |
| 4. H. Crookshank. | 10. G. Tucci. |
| 5. A. H. Harley. | 11. T. Williams. |
| 6. W. E. Harris. | |

The following papers were read:—

1. V. NARAYANASWAMI.—*A note on Cassia javanica L. and Cassia nodosa Ham. with a key to the cultivated tree Cassias.*

The correct identification of the two most beautiful of tree Cassias, namely the Java Cassia, *Cassia javanica* L. and the Busuk-Busuk, *C. nodosa* Ham., that are commonly met with in cultivation in several parts of India has for long been unsatisfactory. Of these, the Java Cassia is the oldest species, established by Linnaeus in 1753. Probably on account of long cultivation under artificial conditions, it has become very variable and it may not be unlikely that *C. nodosa* Ham., is one of such variations that has now become firmly established with clear cut characters of a true species. Cytogenetic tests may perhaps solve this probability. Apart from this supposition regarding the origin of *C. nodosa* Ham., these two species differ from each other markedly as to considerably minimize the chances of their being mistaken one for the other.

C. javanica is easily distinguished from *C. nodosa* by (1) the semilunate stipules, produced at the two ends into subulate tails, (2) by the small oblong oval leaflets, equal and rounded at the base and rounded obtuse or slightly emarginate at the tips, and (3) by the oblong obtuse petals, rounded at both ends. In *C. nodosa*, on the other hand, the leaflets are oblong ovate, acute apically and acute or somewhat rounded at the base; the stipules are semilunate with the upper half broader with a distinct median nerve ending in a mucro and the petals are long narrow oblong, acute at both ends.

2. EILEEN W. E. MACFARLANE.—*Blood Grouping in the Deccan and Eastern Ghats.*

Blood group data from 75 persons from the Depressed Classes in the Nizam's Dominions showed frequencies of the three agglutininogen genes similar to that found in the Depressed Classes of Bengal. A small sample of Bhil bloods showed over 50% Group B and very little Group A. Banjaras possess less of B and a north Indian type of blood group distribution. The primitive Chenchus belong preponderantly to groups O and A. B seems to be filtering in by miscegenation on the edge of their

reservation. They thus differ from all other Indian groups tested except Panyars of the Western Ghats and Malayali lower castes. Among 123 Bison Head Maria Gonds in Bastar State the three groups were fairly equally represented with a regular preponderance of about 10% of Group B over A, a similar distribution to that found among the Santals by Sarkar.

The following communications were made:—

1. ALBERT W. C. T. HERRE. (*Stanford University, U.S.A.*).
—*Fisheries Development in the East.*

The present condition of fisheries and the objectives of the Fisheries Departments in the Philippines and Malaya will be discussed and a comparison made with conditions elsewhere in the Orient. The problems of local versus alien development and domination will be considered at the same time. Marine and fresh-water fisheries, and the importance of pond culture will be treated. •

2. CHINTAHARAN CHAKRAVARTI.—*Sanskrit Manuscripts in the Royal Asiatic Society of Bengal.*

The Royal Asiatic Society of Bengal is the custodian of one of the biggest collections of Sanskrit Manuscripts. History of the different collections—Society's own collections, Government collections, Indian Museum collections. Catalogues and notices of the Manuscripts. Manuscripts of a general interest: old Manuscripts of the 7th–12th centuries; illustrated Manuscripts of artistic interest, Manuscripts of works on the game of chess, on warfare, on the Persian language, on stealing, on veterinary science and on hawking. Sanskrit texts published from rare or unique manuscripts belonging to the Society. Works published with the help of manuscripts in the possession of the Society.

Communication No. 2 by Prof. Chintaharan Chakravarti was not read but postponed for the next meeting with his consent.

The Chairman announced the result of the ballot for the election of Ordinary Members and declared that all the candidates had been duly elected.

OBITUARY NOTICES

RAI BAHADUR KANAK LAL BARUA, C.I.E.

(1872-1940)

Rai Bahadur Kanak Lal Barua, C.I.E., son of Lakshmi Lal Barua, was born at Gauhati in the year 1872. After obtaining the B.A. and B.L. degrees of the Calcutta University, he practised at the Gauhati Bar for a few years. He next joined the Assam Civil Service as an extra Asst. Commissioner in 1900. He was appointed temporarily to be Registrar of Co-operative Societies and Director of Industries in September 1918 and in 1922 was appointed substantively as a holder of a 'listed post' in the Indian Civil Service. From October 1923 he was head of the combined departments of Agriculture, Industries, and Co-operative Societies. He retired in 1927 but soon afterwards he was appointed the Member for Commerce and Industry in the Assam Government. In 1929 he was appointed as a Minister for Self-Government in the Saadullah Ministry. He held this position up to April 1937 and, in recognition of his services, he was made a Companion of the Order of the Indian Empire in 1937.

In addition to his administrative work, he was a keen student of Assamese history and antiquity and published a large number of papers in many Historical Journals. He was a member of the Royal Asiatic Society of Bengal since 1931 and took a great deal of interest in its work. He was also a member of the Council of the newly founded Indian Anthropological Institute. For many years he was the President of the Kamarupa Anusandhan Samity and the mainstay and editor of its organ *The Journal of the Assam Research Society*, as well as Secretary for the Provincial Coin Cabinet. His most important work is 'The Early History of Kamarupa' which was published in 1933, dealing with the history of Assam from the earliest times of the advent of Ahoms.

He was a man of very liberal views and personal charm and had a wide circle of friends. His death will be mourned by students of India not only in his native province of Assam but throughout the country.

B. S. GUHA.

(Read in the Ordinary Monthly Meeting of 1st April, 1940.)

PANDIT AMULYA CHARAN VIDYABHUSANA
(1877-1940)

Pandit Amulya Charan Vidyabhusana was an Orientalist who devoted his energies mostly in making a popular exposition of the stories of the past glory of Bengal as well as of India, among the people of Bengal. He was a Professor of Pali and the Indian Vernaculars in the Vidyasagar College for a good many years. He had a working knowledge of a number of modern languages—Indian and European. Towards the end of the last century he made his debut into his literary career by starting a Translating Bureau which undertook to translate correspondence in different languages of the world. In 1901 he founded the Edward Institution for teaching languages.

He was intimately connected with various literary and cultural institutions of Bengal. He was an Ordinary Member of the Royal Asiatic Society of Bengal since July 1905 till the time of his death. He was an active member of the Bangiya Sahitya Parishat for many a year. He served the Parishat in various capacities: Librarian (1310-1313 B.S.), Assistant Secretary (1326-1329 B.S.), Secretary (1330-1334 B.S.; 1343-1344 B.S.), Vice-President (1341-1342 B.S.). He presided over the annual sessions of a number of literary conferences in and outside Bengal. He was at one time or other the editor of a number of well-known journals of Bengal. He was the first editor of one of the best Bengali journals—*Bhāratvarṣa* (1320 B.S.). He was also the editor of *Bāṇī* (1312-8), *Marmavāṇī* (1322 B.S.), *Gaurāṅgasevaka* (1325-1335 B.S.), *Kāyāsthapatrikā* (1326, 1334-1335 B.S.), *Pañcapuṣpa* (1336-1339 B.S.), *Śrī Bhārati* (1340-1346 B.S.). Pandit Amulyacharan wrote mostly in Bengali. He contributed numerous papers in different popular Bengali journals and several in a number of periodicals in English. Of his publications in book-form, mention may be made of the following:—

1. Edition of the *Śrīkrṣṇavilāsa* (a medieval Bengali work) of Kṛṣṇadāsa (Bangiya Sahitya Parishat Series, 1326 B.S.).

2. Descriptive Catalogue of Bengali MSS. in the Bangiya Sahitya Parishat (Vol. III, pt. 1, 1330 B.S.; Vol. II, pt. II, 1333 B.S.).

3. Edition of *Saṅkīrtanāmṛta* (a medieval Bengali work) of Dinabandhu Dāsa (Bangiya Sahitya Parishat Series, 1336 B.S.).

4. *Sarasvatī* (Vol. I) (Devatattva-granthamālā No. I). A detailed account in Bengali of the Goddess of Learning.

5. *Baṅgiya Mahākoṣa* (Encyclopaedia Bengalensis)—edited by Pandit Amulyacharan (chief editor) with the help of a band of scholars. One volume (846 pages) and twelve parts (384 pages) of the second volume have so far been published.

CHINTAHARAN CHAKRAVARTI.

(Read in the Ordinary Monthly Meeting of 3rd June, 1940.)

RAI SAHEB NAGENDRA NATH VASU

(1866-1938)

Nagendra Nath Vasu was a well-known scholar who has done a great service to Indology by his voluminous contributions in different branches of the subject. The compilation of the *Viśvakōṣa* (Encyclopaedia Bengalensis) will give him a place of honour in the history of the vernacular literatures of India. It was on this work that he devoted the best part of his life and energy. He had a great fascination for lexicographical work with which he came to be associated quite early in his life. Before he took upon himself the task of compiling the *Viśvakōṣa* he is stated to have worked for some time for the *Śabdendu-prakāśa-mahākōṣa* and for the supplement of the *Śabdakalpadruma*.

He was associated with the Asiatic Society of Bengal as an Ordinary Member from September 1894 to May 1927 and as an Associate Member since May 1927. He had contributed about half a dozen archaeological papers in the Journal of the Society (Old Series, Vols. 65, 66, 67, 69) during the years 1896-1900.

He was intimately connected with the Bangiya Sahitya Parishat for many years and in many capacities. He was editor of the Journal for nine years (1311-1318 B.S.). He was elected Vice-President of the Parishat on several occasions (1330, 1331, 1336, 1340 B.S.). He edited a large number, as many as a dozen, perhaps the largest number so far published in the Series under the editorship of one scholar, of works, mostly texts in old and medieval Bengali, in the Series of the Parishat. It was Mr. Vasu who in a sense introduced the Series and edited the first two works published by the Parishat. The Parishat in recognition of his vast scholarship as reflected in his numerous works, especially his monumental compilation, the *Viśvakōṣa*, honoured him at a special meeting held on Caitra 17, 1318 B.S., on the completion of the great work of his life. The Parishat also gave him the highest honour at its disposal by electing him one of its 15 distinguished members in 1319 B.S. The Government of India honoured him with a *Rai Saheb* in the year 1918.

It is not possible to give here a complete bibliography of the numerous publications of Mr. Vasu. A list of the more important of these is given below:—

1. *Viśvakōṣa* or Encyclopaedia in 22 quarto vols. of about 16,000 pages. He took up the work in 1295 B.S. from page 113 of Vol. II where it was left by the original editors Rangalal Mukherji and Trailokyanath Mukherji and completed the last volume in 1318 B.S.

2. A highly improved edition of the work in Hindi was also published by Mr. Vasu in 25 quarto volumes of 768 pages each. But it is a pity that he was not spared to complete the second and up-to-date edition of the Bengali version of which four volumes of 788 pages each have so far been published.

3. Archaeological Survey of Mayurbhanja, Vol. I, 1911.

4. Modern Buddhism and its followers in Orissa, 1911.

5. Castes and Sects of Bengal (in Bengali) in 11 vols. (1321 B.S.—).

6. Social History of Kamarupa, Vol. I, 1922 ; Vol. II, 1926.

7-17. Editions of Rasamanjari of Pitambara Dasa (1306 B.S.), Mahabharata of Vijayapandita (1306 B.S.), Caitanyamangala of Jayananda Dasa (1312 B.S.), Kasiparikrama of Jayanarayana Ghoshal (1313 B.S.), Sunyapurana of Ramai Pandit (1314 B.S.), Navadvipaparikrama of Narahari Cakravarti (1316 B.S.), Kalkipurana of Ramalocana Dasa (1320 B.S.), Samgitaragakapadruma of Krisnananda Vyasadeva Rasasagara (1321 B.S.), Tirthamangala of Vijayarama Sen (1322 B.S.), and Tirthabhramana of Yadunath Sarvadhikari (1322 B.S.).

CHINTAHARAN CHAKRAVARTI.

(Read in the Ordinary Monthly Meeting of 3rd June, 1940.)

**PROCEEDINGS OF THE MEDICAL SECTION
MEETINGS, 1940.**

No meeting of the Medical Section was held during the year.

INSTRUCTIONS TO AUTHORS FOR THE SUBMISSION OF PAPERS FOR PUBLICATION IN THE JOURNAL AND MEMOIRS OF THE SOCIETY.

PAPERS

1. All communications submitted to the Society for publication should be addressed to the General Secretary and not to any officer by name. They should be type-written on one side of the paper with sufficient margin on the sides, and in all respects must be absolutely in their final form for printing.
2. Papers must be accompanied by a brief abstract not exceeding 1,000 words, which shall indicate the subject of the paper and the nature of the advance in the existing knowledge on the subject.
3. Tables of contents (for long papers), references to the plates and literatures, etc., should be given in their proper places.
4. Quotations in Oriental languages should be in the original script, and wherever they are transliterated the System of Transliteration adopted by the Society must be followed (see instruction 15). The names of *genera* and *species* in the case of biological communications should be underlined to indicate that they are to be printed in italics.

ILLUSTRATIONS

5. All drawings and photographic prints should be as clear as possible. They should be in a form immediately suitable for reproduction, preferably of a size to permit reduction to about two-thirds the linear dimensions of the original, and should be capable of reproduction by photographic processes.
6. Drawings and diagrams to be reproduced as line blocks should be made with fixed Indian ink, preferably on fine white Bristol board, free from folds or creases; smooth clean lines or sharp dots, but no washes or colours should be employed for shading. The positions of the illustrations that are to appear in the text must be clearly indicated in the margin of the paper; and explanations of the figures should be typed at the end of the main paper with the indication: *Explanation of text-figures*.
7. The maximum space allowable for illustrations in the *Journal* and the *Memoirs* are as follows:—

Journal, text, 3½" × 6½"; Plates, 4½" × 7".

Memoirs, text, 6½" × 9"; Plates, 7½" × 9½".

These spaces include the usual figure numbering. Explanations of the plates to be printed on separate pages, facing the plates, must be typed on separate sheets.

PROOFS

8. A proof of each paper will be sent to the author, on the address given on the MS.
9. No alteration or addition necessitating any considerable change of type may be made in the proofs. Should such alterations or additions be necessary, these must be added as footnotes duly dated and initialled. The cost of corrections made in the proofs should not exceed 20% of the printers' charges for the setting of the paper; any excess will be charged to the authors.
10. The proof must, if possible, be returned within one week of the date of receipt to the Society duly corrected.

MISCELLANEOUS

11. Authors of papers published in the Society's *Journal* and *Memoirs* are entitled to receive *gratis* 30 copies of each paper, and as many more as they require on payment of the cost of printing, paper, and make up. Such requirements must be stated at the time of returning the proofs.

12. Papers by non-Members of the Society must be communicated through a Member, who shall satisfy himself that the paper is suitable for presentation to the Society, and is ready for the press.

13. No communications under consideration or accepted for the Society's publications may be published elsewhere without the express sanction of the Council.

14. To facilitate the compilation of indexes, each author is requested to return to the Society together with the proof, a brief index of the contents of the paper. These indexes will be edited and incorporated in the volume when completed.

15. The following systems of transliteration are henceforth to be followed (as far as practicable) in the publications of the Society, in quoting non-European words as such. In giving names of places, authors or books, which would occur in the course of the English text, a 'broad' transcription, following English values of the consonants and avoiding diacritical marks, is recommended.

SANSKRIT

अ = a आ = ā इ = i ई = ī उ = u ऊ = ū
 ए = ē ऐ = ai ओ = ō ऋ = ṛ ॠ = ṛi (or ē) ॡ = ai (or ai)
 औ = o (or ō) औ = au (or au) (Prakrit अरु अउ = ai, aū)
 ऽ (Anusvāra) = ṁ ः (Visarga) = ḥ × (Jihvāmūliya) = χ
 ॡ (Upadhmāniya) = φ

Sandhi Vowels may be indicated as â î û ê ô. Avagraha = '.
 Accents in Vedic—Udātta á â etc. Svarita—â.

क ख ग घ ङ = k kh g gh ṅ (or ṇ)
 च छ ज झ ञ = c ch j jh ṣ (or p)
 ट ठ ड ढ ण = ṭ ṭh ḍ ḍh ṇ
 त थ द ध न = t th d dh n
 प फ ब भ म = p ph b bh m
 य र ल व = y r l v (or w)
 श ष स ह = ś ṣ s h
 ङ ञ = ṅ ṇ

HINDI (and other North Indian Speeches)

As for Sanskrit, only nasalised Vowels are to be indicated by a tilde mark (~) above the Vowel (e.g. अँ आँ इँ ईँ उँ ऊँ ँ, ऌ, ड, ढ, ण, त, थ, द, ध, न, प, फ, ब, भ, म, य, र, ल, व, श, ष, स, ह, ङ, ञ).

etc.), and ङ ढ are to be denoted optionally by either d dh or by r rh. Care should be taken in distinguishing व and व (b and v)—the latter preferably may be written as w rather than v, specially in intervocal and final positions. The final silent -a may be optionally omitted : but in quoting Early Hindi, etc. the final a should be retained. ञ ञ as in Rajasthani, Panjabi, etc. are to be indicated as in Vedic.

BENGALI

The system for Sanskrit, with the provision for nasal Vowels and for ড ঙ (= ङ ढ) as in Hindi. For ব (অভ্যন্তরীণ ব), in all tatsama or pure Sanskrit words, y should be employed, in Prakritic and semi-tatsama words, j; subscribed ব (= ব-ফলা) should be indicated by y. The difference between বগীয় ব (= b) and অভ্যন্তরীণ ব (= v, w) need not be indicated for Bengali—b may be written for both : only subscribed ব (ব-ফলা) is to be written as w (e.g. Skt. *Viśvāsa* = Bengali *Biśwās*). Final -a may be omitted optionally, but it should be retained for Early Bengali.

ARABIC

In transcribing Arabic, according to the context either (i) the native Arab pronunciation (as current in the *Jaziratu-l-'Arab*) or (ii) the Perso-Indian pronunciation may be followed.

(i) Arabic in native Arab Pronunciation—

أ (alif hamza) = ' ; ب = b, ت = t, ث = th (or θ) ; ج = j (or g), ح = h, خ = kh (or x, or x) ; د = d, ذ = dh (or δ) ; ر = r, ز = z ; س = s, ش = sh (or š) ; ص = s, ض = d ; ط = t (or t), ظ = z (or z) ; ع = ' , غ = gh (or γ) ; ف = f, ق = q ; ك = k ; ل = l ; م = m ; ن = n ; و = w, ū ; ه = h ; ي = y, ī.

— respectively = a, i, u (or ē, ö optionally in place of i, u), ا = a, i, u ; آ = ā ; إ = ī ; ū = ū ; ع = ay (or ai) ; و = aw (or au) ; tanwīn = ^{un, an, in} above line ; ى = á. (Note: عبد الحق = 'Abdu-l-Haqq, or 'Abd al-Haqq, not 'Abd-ul-Haqq.)

ة = t (or h, or th).

(ii) Arabic in Perso-Indian Pronunciation, in the case of the following letters—

ث = ṣ, ذ = ḏ, ص ض = ṣ ḏ, ط ظ = ṭ ḏ.

PERSIAN

As for Arabic in Perso-Indian Pronunciation, with the following special Persian letters added :

پ = p, چ = ch (or c, or č), ژ = zh (or ž), گ = g.

و may be indicated for Persian by v rather than w.

For Early Modern Persian, and Indian pronunciation of Persian, the *majhūl* sounds of و and و (= ē, ō) may be employed side by side with the *ma'rūf* sounds (= i, ū).

وِى = au, ai. Nasalisation (*nūn-i-ghunna*) may be indicated by tilde mark (~) on the top of the Vowel, as in the case of Hindi, etc.

Hā-i-mukhtaḥfi can be represented optionally as ah or a. The *Izāfat* is to be written as -i- (or -ē- optionally).

URDU

As for Persian, only و = w, rather than v. See also the directions for Hindi. The special Urdu letters in the Perso-Arabic alphabet for Urdu are to be transcribed as in Hindi, e.g. ث = t, ذ = ḏ, ژ = r (or ṛ).

TAMIL

In transcribing Old Tamil, the modern pronunciation should not be followed—an exact transliteration will be enough for the purpose. This is in case of the consonants, which for Old Tamil should be indicated as below :—

க = k (never g, even medially) ;	ங = ṅ (or ŋ)
ச = c (never ś, or j) ;	ஞ = ñ (or ṇ)
ட = ṭ (never ḍ, even medially) ;	ண = ṇ ;
த = t (never d, or th) ;	ந = n ;
ப = p (never b, or v) ;	ம = m ;
ய ர ல வ = y, r, l, v ;	ஈ = ī ; ன = n' ; ற = r' (ஈற = n'r',
not ndr ; றற = r'r', not tt) ;	ழ = ṣ (or ḷ) ; ஃ (<i>āyṭam</i>) = ḥ.

Long ē and Long ō are to be distinguished from the corresponding short vowels by the *macron* or length mark—the short e and short o being left unmarked.

TIBETAN

Vowels—	a	i	u	e	o
Consonants—k	kʰ	g	ŋ	(or ŋ)	
	c	ch	j	ñ	(or j)
	t	th	d	n	
	p	ph	b	m	
	ts	tsh	dz	w	
	ʒ	z	'(or ʒ)		
	y	r	l	s	h

Silent letters need not be attempted to be indicated in transcription, but if necessary, the modern pronunciation may be denoted by some consistent system of phonetic transcription within brackets after the transliterated Tibetan (or *vice versa*).

CHINESE

Usually the North Mandarin Pronunciation should be represented, in Wade's system, with tones denoted by numerals. As far as necessary or practicable, the original Chinese character and the reconstructed pronunciation of it in Ancient Chinese should be given within brackets.
